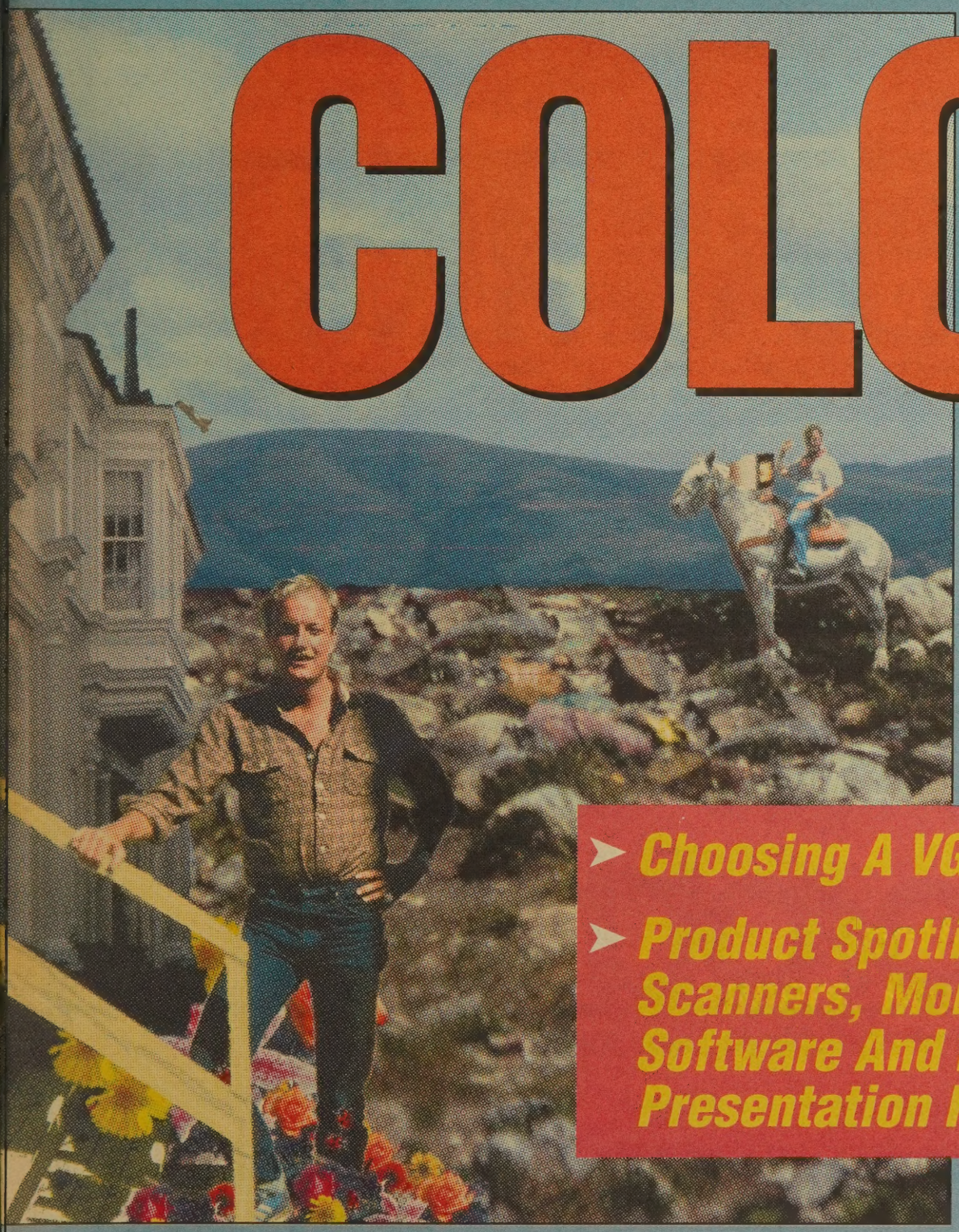
Southern California's Computer Magazine
April 30, 1990 • 69
FREE

MICROTIMES™

NIX EXPO
MAY 7-9
PREVIEW ON PAGE 44



COLOR

The Next Frontier

➤ Choosing A VGA System Page 54

➤ Product Spotlight: Printers, Scanners, Monitors, Software And More For Presentation Power Page 74

UNIX CONFUSION:

"The success of UNIX has been a mixed blessing. There are so many different UNIXes in distribution that the application programmers find out quickly that UNIX is never just UNIX."

STORY ON PAGE 62

DVORAK'S OPEN LETTERS:

"Bill Gates, rumor has it you fly coach when you travel. Do you want to go down in history as a tightwad? A few minutes of interest income can buy the jet..."

STORY ON PAGE 130

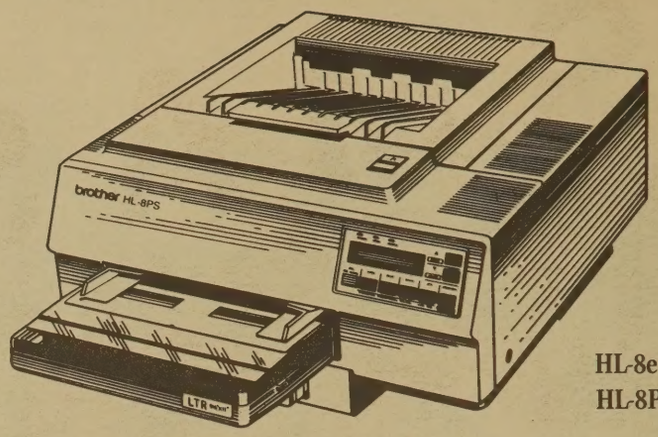
PC WORLD BEST BUY
2/89 HL-8

PERSONAL COMPUTING TOP RATED
9/89 HL-8e

PC MAGAZINE EDITOR'S CHOICE
10/88 HL-8

PC MAGAZINE EDITOR'S CHOICE
11/89 HL-8e

PC MAGAZINE EDITOR'S CHOICE
11/89 HL-8PS



HL-8e
HL-8PS

THE BEST JUST KEEP GETTING BETTER . . . AND BETTER

The HL-8e Laser Printer from Brother offers the latest enhancements in high-speed, letter-quality and high-resolution graphics printing. The HL-8e delivers more memory, more resident fonts, more emulations . . . more value than any other laser printer available today!

The HL-8e even offers HPGL (Hewlett-Packard Graphics Language), the industry standard plotter emulation, essential for CAD/CAM and engineering applications. And, with a Centronics parallel and RS-232C serial interface, the HL-8e easily plugs into any PC.

Brother's HL-8PS Laser Printer provides your business with the leading edge in high-resolution PostScript compatible printing capabilities. The Brother HL-8PS delivers a wide variety of resident fonts, outstanding memory capacity and high-speed printing for full-page graphics, envelopes and even transparencies.

Performance and value. Your business will look smart—and you will too—when you choose Brother Laser Printers. So contact these authorized dealers today for specially priced laser printers now in stock. Brother. We're at your side.

We're at your side.

brother®

Now Available At These Authorized Dealers:

CANOGA PARK
RANTEK
22129 SHERMAN WAY
(818) 347-1100

CARLSBAD
OPTIMAL
1850 MARRON RD., STE. 110
(619) 434-3713

CHATSWORTH
WIZARD OF OSZ
20630 LASSEN ST.
(818) 709-6969

CITY OF COMMERCE
EASTERN ENTERPRISES
6001 BANDINI BLVD.
(213) 725-3080

COLTON
COMPUTER SYSTEMS PROFESSIONALS
1016 E. COOLEY DR., STE. P
(714) 370-0693

COSTA MESA
COMPUTER AND PRINTER CENTER
3165 S. HARBOR BLVD.
SUITE F
(714) 241-0720

GLENDALE
HFS COMPUTING
457 PALM DRIVE #101
(818) 956-0888

LOS ANGELES
1ST COMPUTER (2 LOCATIONS)
1740 WESTWOOD BLVD.
(213) 470-2501

UNITEC
3158 WILSHIRE BLVD.
(213) 388-2400

MONTEREY PARK
PC PLUS
710 E. GARVEY
(818) 571-6955

ORANGE
I.D.M.S.
1045 W. COLLINS AVE.
(714) 744-9797

REDLANDS
DIGITAL INFORMATION SYSTEMS
416 E. STATE ST.
(714) 798-0033

RIVERSIDE
CARDINAL COMPUTERS
10442 Magnolia Ave.
(714) 785-6160

ROWLAND HEIGHTS
NEW TECHNOLOGIES
19065 COLIMA ROAD
(818) 964-8646

SAN DIEGO
BYTE SHOP
8038 CLAIREMONT MESA BLVD.
(619) 565-8008

C.S.C.I.
4849 RONSON COURT #101
(619) 278-2560

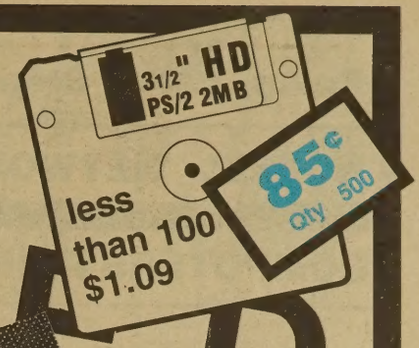
MIPS COMPUTATION
760 THOMAS AVE.
(619) 483-1685

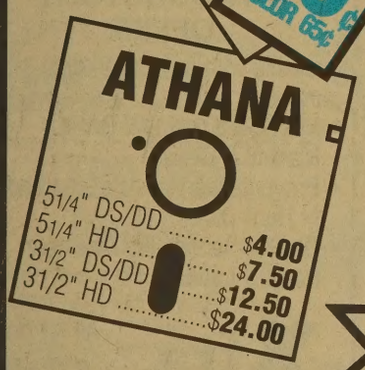
OEI
9845 VIA PASAR
(619) 549-2199

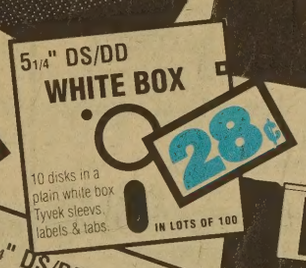
VALCOM
8340 CLAIREMONT MESA BLVD.
#105
(619) 565-8830

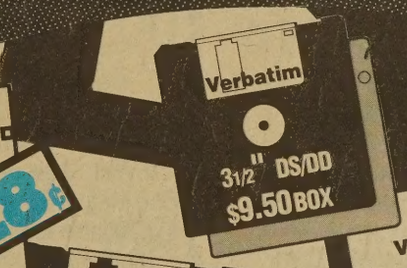
UPLAND
COMPUTER HAVEN
957 W. FOOTHILL BLVD.
(714) 985-3278

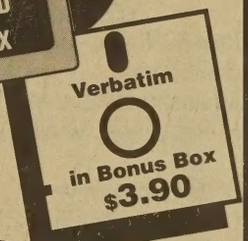
SMASHED PRICES

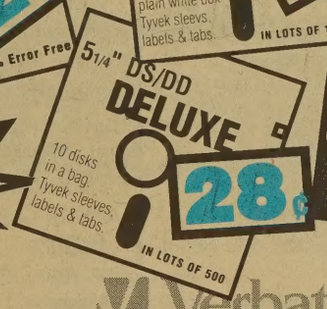


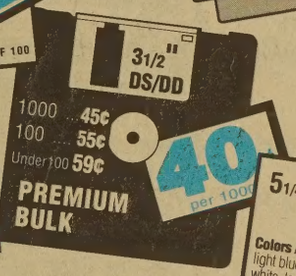






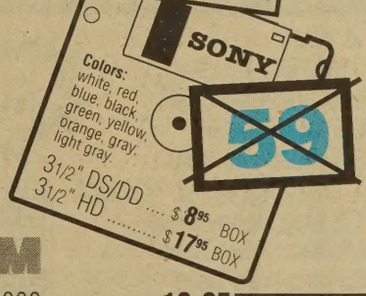






Qty Prices CALL

5¼" DS/DD
COLOR
Tyvek sleeves, labels & tabs.
Colors Availble:
light blue, white, lavander, gray, red, brown, green, yellow, blue, orange, med. dark blue, maron magenta, rainbow pack.
35¢
IN LOTS OF 100



BASF

5¼" DS/DD	$4.95 BOX
5¼" HD	8.95 BOX
3½" DS/DD	8.95 BOX
3½" HD	18.95 BOX

maxell

5¼" box of 10 disks	$5.95 BOX
5¼" HD	10.95 BOX
3½" DS/DD	9.95 BOX
3½" HD	19.95 BOX

Verbatim
A Kodak Company

5¼" DS/DD	$5.50 BOX
5¼" DS/DD Teflon Preformatted	5.50 BOX
5¼" HD Preformatted	9.95 BOX
3½" DS/DD	8.95 BOX
3½" HD	18.95 BOX

KAO

5¼" DS/DD	$4.00 BOX
5¼" HD	7.50 BOX
3½" DS/DD	10.50 BOX
3½" HD	21.50 BOX

Dysan

5¼" DS/DD	$6.50 BOX
5¼" HD	11.50 BOX
3½" HD	21.50 BOX

Nashua

5¼" DS/DD	$4.00 BOX
5¼" HD	7.50 BOX
3½" DS/DD	7.95 BOX
3½" HD	18.95 BOX

Computer Paper 9½" x 11" 2,500 sheets	$22.95
Computer Paper 14⅞" x 11" 3,000 sheets	$32.95
Computer Cables (Parallel, Serial, etc.)	$7.95
Power Surge Control (UL)	$8.95
AC Power Pad (Master Pad) (UL)	$21.95
5¼" Diskholder holds over 140 diskettes	$10.95
5¼" Diskholder holds over 100 diskettes	$8.95
5¼" Diskholder holds over 50 diskettes	$6.95

5¼" Smokey Deluxe Library Case holds 10 diskettes	$1.50
3½" Diskholder holds over 50 diskettes	$9.50
3½" Diskholder holds over 80 diskettes	$10.95
3½" Deluxe Library Case holds over 20 diskettes Perfect Data	$14.95
3½" Smokey Deluxe Library Case holds 10 diskettes	$1.50
Head Cleaning Kit for disk drives (3½" or 5¼")	$3.95
Data Switch Box ABC-$25, ABCD-	$35
Keyboard Drawer Wooden-$39.95, Grey Metal-	$29.95
Keyboard Drawer Under Table	$24.95

3M

DC-2000	$16.95
DC-600A	$22.95
DC-6150	$26.95
DC-300XLP	$20.95
Maxell CS 600 HD	$18.95
Verbatim ST 600 HD.	$12.95

EXTRAS

Paper Sleeves	2¢
Tyvek Sleeves	4¢
Labels & Tabs	2¢

Prices are for minimum **100** diskettes. All diskettes are **101%** error free.

Shipping: 1st 100 diskettes, **$3.00**, each additional 100, **$1.00** — UPS, COD, Add **$2.75**

PILLARCO, INC.

RIBBONS AVAILABLE

1567 Westwood Blvd. • Los Angeles, CA 90024
MONDAY-FRIDAY 8:30-6:00 • Saturday 10:30-5:30
(800) 441-3475 FAX: (213) 477-6420
(213) 477-5442

VISA MasterCard AMERICAN EXPRESS

Same Day Shipping
Price subject to change

ATTENTION:
DEALERS/VOLUME BUYERS
We'll beat any advertised price in Southern California
CALL FOR QUOTE

Be An Xtra Step Ahead
NOVELL NETWORKING
COMPUTERS PRINTERS

SOFTWARE xtra COMPUTER

Be An Xtra Step Ahead
NOVELL NETWORKING
NETWORKING SERVICE

SUPPLIERS TO FORTUNE 500 COMPANIES
UNIVERSITIES AND COLLEGES
THROUGHOUT THE COUNTRY

• COMPUTERS • HARDWARE
SOFTWARE • ACCESSORIES • SUPPLIES

AT WAREHOUSE PRICES

WE CHALLENGE ANY COMPUTER STORE AND MAIL ORDER HOUSES TO BEAT OUR PRICES , QUALITY, SERVICE & SUPPORT

35%-85% OFF RETAIL!

COMPUTERS FOR THE POWER HUNGRY USERS AT THE LOWEST PRICES!

8088-10

Intel 8088 Chip-10 0 Wait State
640K Ram
Monochrome Graphics Card
Hi-Res Amber Monitor w/Swivel & Tilt
360K Floppy Drive
Desktop Case w/Turbo & Reset
Eight Expansion Slots
Serial, Parallel, Clock, Game Port
Enhanced 101 Keyboard
Lock and Key
One Year Limited Warranty Parts & Labor

$495

80286-12

BEST BUY!

Intel 80286 Chip
0 Wait State
One Meg of Ram
Expandable to 4MB on Motherboard
1.2 Meg Floppy Drive
Hard and Floppy Controller
20 Meg Hard Drive
Monochrome Graphics Card
Hi-Res Amber Monitor
Serial, Parallel, Clock
Enhanced 101 Keyboard
Desktop Case w/Turbo and Reset Buttons
One Year Limited Warranty Parts & Labor

$895

80286-12

Intel 80286 Chip
0 Wait State
One Meg of Ram
Expandable to 4MB on Motherboard
1.2 Meg Floppy Drive
Hard and Floppy Controller
15 Meg Hard Drive
Monochrome Graphics Card
Hi-Res Amber Monitor
Serial, Parallel, Clock
Enhanced 101 Keyboard
Desktop Case w/Turbo and Reset Buttons
One Year Limited Warranty Parts & Labor
with 14″ VGA Color $1495

$1095

Xtra PACKAGE DEAL

INTRODUCTORY OFFER

Available with any Computer purchase

- MS DOS 3.3 w/GW BASIC Manual & Disks
- Preventative Virus Check Loaded In Hard Disk
- On-Site Service For One Year Parts & Labor

Xtra All for only **$79**

(On site service in southern California only)

80386SX-16

0 WAIT STATE

THE NEW GENERATION

Intel 80386SX Chip
One Meg of Ram
Expandable to 8MB on Motherboard
1.2 Meg Floppy Drive
Medium Tower Case
65 Meg Hard Drive
16 Bit VGA Card
14″ VGA Monitor
Serial, Parallel, Clock
Enhanced 101 Keyboard
One Year Limited Warranty Parts & Labor
Monochrome $1495

$1795

~~80286~~ **80386SX**

80386- 25

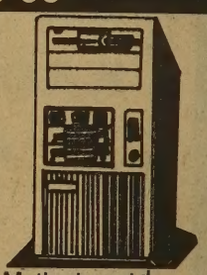
0 WAIT STATE

Intel 80386-25 Chip
Two Meg of Ram
Expandable to 8MB on Motherboard
Hard and Floppy Controller
1.2 Meg Floppy Drive or 3½″ 1.44
Medium Size Tower Case
65 Meg Hard Drive
16 Bit VGA Card
14″ VGA Monitor w/Swivel & Tilt
Enhanced 101 Keyboard
2 Serial, Parallel, Clock
One Year Limited Warranty Parts & Labor
80386-25 MHz above config. with 2 Meg of RAM. $2595

$2395

80386-33

0 WAIT STATE



32K Cache
386-33
Phoenix BIOS
Intel 80386-33 MHz Chip
Two Meg of Ram
Expandable to 16 MB on Motherboard
1.2 Meg or 3½″ Floppy Drive
Hard and Floppy Controller
Super Tower Case
Enhanced 101 Keyboard
Serial, Parallel, Clock
55 MHz Landmark
One Year Limited Warranty Parts & Labor

$2395

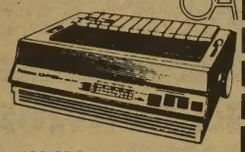
AUTHORIZED DEALERS FOR AST, LOTUS, NOVELL, COMPUTER ASSOCIATES, PANASONIC, OKIDATA, STAR, NEC, PACKARD BELL, CITIZEN
Hours: Mon-Sat. 9 am-6 pm
Prices and availability subject to change without notice.
Call for information about our on site maintenance program.

3959 Wilshire Blvd., Los Angeles, CA 90010
(213) 383-3517 **Fax: (213) 383-1243**
1-800-322-XTRA

We respect all trademarks

SOFTWARE extra COMPUTER

KXP1180
Panasonic Office Automation

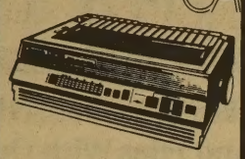


- 192 CPS draft/63 CPS LQ
- 16.5″ carriage, 13.6″ print line
- 5 resident LQ fonts
- 4 multiple paper feed paths
- Auto load & paper parking
- Epson & IBM Compatible
- 2 year limited warranty

Sugg. List $699.95

$189 w/Cable

KXP1124
Panasonic Office Automation



- 192 CPS draft/38 CPS LQ
- 4 built-in NLQ fonts
- Rear, top, bottom paper feed
- Auto load & paper parking
- 2 year limited warranty

Sugg. List $299.95

$299 w/Cable

KXP1624
Panasonic Office Automation

- 192 CPS draft/63 CPS LQ
- 5 resident LQ fonts
- 4 paper feed paths
- Push pull/tractor & friction feed
- Auto load & paper parking
- Epson & IBM Compatible
- 2 year limited warranty

$479 w/Cable **Sugg. List $499.95**

LASERPARTNER™ NEW RELEASE

KXP4450
Panasonic Office Automation

Laser Printer

- Business, Word Processing, Desktop Publishing
- Prints 11 PPM, 500 sheet capacity
- 11 resident portrait & landscape fonts
- 300 DPI resolution
- Five popular emulations
- 512K RAM expandable to 1.5 MB
- 1 year limited warranty

$1395 w/Cable & Toner

KX-P4420
Panasonic Office Automation

Laser Printer

- Business, Word Processing,
- Desktop Publishing
- Prints 8 PPM, 250 sheet capacity
- 11 resident portrait & landscape fonts
- 300 DPI resolution
- Five popular emulations
- 512K RAM expandable to 1.5 MB
- 1 year limited warranty

$1095 w/cable & toner

CITIZEN GSX-140

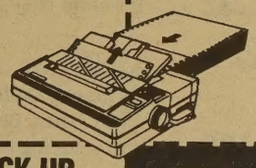
THE PRINTER WITH SIMPLE ENGLISH PROMPTS

Superior 24-wire print quality

CITIZEN Color On Command

$379 w/Color Option & Cable

$299 w/Cable



NEW NEW CITIZEN GX-200

THE PRINTER WITH SIMPLE ENGLISH PROMPTS

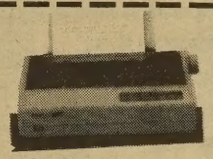
Superior 9 wire print quality

$199 w/Cable

$279 w/Color Option & Cable

CITIZEN Color On Command

star micronics NX1000II



$179 w/cable

- 180 CPS draft/45 CPS NLQ
- 9 Pin Dot Matrix
- 4 NLQ fonts
- Paper Parking
- IBM/Epson compatibility
- Friction/push tractor feed

HARD DISK DRIVES

5.25″ Half-Height Drives

ST225—21.4M 65MS hard drive, MFM recording method

ST238R—32.7M 65MS hard drive, RLL recording method

ST2511—42.8M 28MS hard drive, MFM recording method

5.25″ Full-Height Drives

CDC 70MB 28MS MFM

PTI Model #351
65 Meg Drive
3.5″ 38MS

CALL FOR THE BEST PRICE NOW!

TAPE BACK UP SYSTEMS

COLORADO MEMORY SYSTEMS INC.

DJ10
Jumbo Internal Tape Drive for Use With IBM PC XT/AT Compatibles

- Up to 120 MB capacity
- Fast 40 MB in under 11½ minutes
- QIC-40 interchange standard
- Floppy Interchange

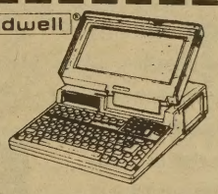
$295

SHARP PC-5541

- Intel 80286-12
- Runs 6/8/12 MHz
- 640KB Internal RAM Exp 3MB
- 1.44 Floppy Drive
- 40 Meg 3.5″ Winchester Drive
- VGA Display Card 640x480
- Illuminated Double Supertwist liquid crystal display
- Serial, Parallel, Clock

$2595

Bondwell



B310 Bondwell 310 Ultra Slim and Lightweight

- 12 MHz CMOS 80C286 CPU with 0 wait state
- 1MB RAM expandable 2MB
- Fast access (25ms) 40MB hard drive
- High performance hard disk controller with 1:1 interleave factor
- 1.44M 3.5″ floppy disk drive
- 10.5″ supertwist nonglare LCD
- Removable rechargeable Ni-Cad battery pack
- Retractable Keyboard legs
- 8.5 lbs.

$2299

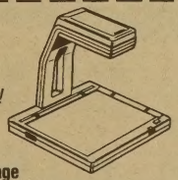
GoldStar

- 14″ VGA Color Monitor
- Swivel & Tilt Base
- 640x480 Resolution
- 16 Bit Paradise (oem) VGA Card

$449

CHINON

Chinon Scanners
The Most Cost-Effective
Scanners on the Market Today!!



$895

DS-3000 Scanner—Basic Package
Includes the DS-3000 scanner, featuring 300 dpi resolution, DS-3000 Utility Software, cable and AC

DS-3000—Desktop Publishing Package
The DS-3000 scanner with Publish It! powerful desktop publishing software and PC Paintbrush Plus.

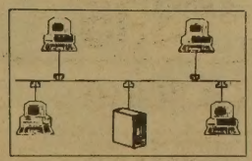
SOFTWARE SPECIALS

We are expanding our software department to include the latest and largest selection of IBM software at unbeatable prices.

BUSINESS SOFTWARE
EDUCATION SOFTWARE
GAME SOFTWARE

NOVELL Authorized

NOVELL.



NOVELL.

Walk-in Demonstrations Available

Visa, Mastercard, Discover, American Express Accepted.
4% surcharge on Amex.

(213) 383-3517

We are not responsible for errors or omissions in advertisements.

Please fill out and mail if you would like a salesperson to contact you or you would like to be added to our mailing list.

NAME _____

COMPANY _____

TELEPHONE NUMBER _____

ADDRESS _____

_____

APRIL 30, 1990 ISSUE #69
MICROTIMES™

TABLE OF CONTENTS

A NOTE FROM THE EDITORS:

This issue of MicroTimes introduces a new look and feel to the publication, intended to make an even wider variety of information more easily accessible to our readers. We've expanded our new Business Solutions section, added a Creative Tools section, and combined some old departments into a new and more complete Resources section. Game reviews—an old favorite neglected in recent months—is back in our Product Spotlight section, along with other product news and upgrade announcements. We'd like your feedback on these changes. Please write: MicroTimes Letters, 5951 Canning St., Oakland, CA 94609.

NEWS AND VIEWS

Industry Insight
Motorola-Hitachi Chip Suit 14
Business Contact Databases From Lotus 14
Software Publishers Association Awards 16
OSF/UNIX International Rift 18
Novell/Lotus Merger 18
Farallon Licenses PhoneNet 20
Macworld Expo Roundup 98

Letters From Our Readers
From The Database Trenches 22
Two Views Of OS/2 22
Disgruntled Former Amiga User Strikes Back 26
High Tech Centers For Disabled Imperiled 28
Perstor Responds To User Problem 30
Czech Entrepreneur Seeks Strategic Partners 30

Realizable Fantasies 32
By Jim Warren
Anti-gerrymandering software for post-census political maneuvering.

Dvorak's Last Column 130
By John C. Dvorak
Dvorak writes open letters and tells it like it is to the CEOs who need to hear it.

BUSINESS SOLUTIONS

Computing On The Go 36
By Ed Kahn
A series for the outbound computer user on portable machines and using them with your office system. This month: better keyboards for portables, and Tandy's bargain-priced portable word processor.

Local Area Networks 40
By Wayne A. Yacco
Good experiences with LANtastic.

UNIX Expo West Preview
Partial List Of Exhibitors 44
Schedule Of Events 46
Expo Floorplan 46

COLOR The Next Frontier

Shopping For VGA *By Jim Meyer and Dan Burleson* 54
If you're thinking of upgrading to a VGA system, you may be in for some surprises. This article offers some comparisons among popular models and gives advice on what to look for (and what to watch out for) when you're shopping.
Comparison Of Six Popular VGA Monitors 56

Product Spotlight: New Color Products
Citizen 200 GX Printer 74
Canon/Aldus Color-imaging System . 74
Nikon LS-3500 Film Scanner 74
OcéColor PostScript Color Printer 76
Mitsubishi SC-7500 Full Color Image Scanner 76
Digital Vision's Professional Series ComputerEyes Digitizer 76

Networking The Mac Office: Exchanging Notes And Files With QuickMail 48
By Mary Eisenhart
Continuing a series on networking products and issues for the Macintosh office. Once the printer's hooked up, you can use the same minimal networking setup to exchange files and information using an electronic mail software package—in this case, QuickMail from CE Software.

The Portable LAN 52
By Nancy Comstock
How Citibank and the US Court of Appeals made their operations more efficient with Altima portables.

CREATIVE TOOLS

Amiga 58
By Matthew Leeds
It's here! The Amiga 3000.

UNIX 62
By Bennett Falk
AT&T UNIX, Berkeley UNIX, mutant variants, the POSIX standard, and resulting confusion.

Atari ST 70
By David Hawkins
Public domain and shareware programs for the ST.

PRODUCT SPOTLIGHT

News And Announcements
New Color Products 74
Product Updates 74
DOS Software Reviews:
Impress 80
Crosstalk For Windows 84
Game Reviews:
The Playroom 86
Cosmic Osmo 90
The Duel (Test Drive II) 90
Halls Of Montezuma 92

RESOURCES

Calendar of Events
The Camp Show: Computer-aided Graphics, Multimedia And Presentation Products 102
April Events 102
May Events 102
Digital World, Seybold Seminar 106
June Events 106
July Events 110
August Events 112

User Group Network
Bulletin Boards 116
Professional Associations 116
User Groups 116, 118

Classifieds 122

Index Of Advertisers 128

DAV TECH COMPUTER CENTER

Limited Time Offer

What's the connection between your next PC purchase and Hewlett-Packard printers?

THE PRINTERS ARE FREE!

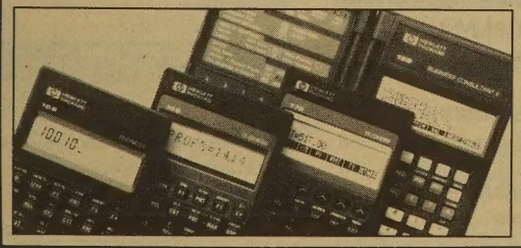
UP TO **40% OFF** All Vectra Computers

3 Buy 3 HP Vectra PCs, you get a free HP DeskJet PLUS printer.

5 Buy 5 HP Vectra PCs, you get a free HP LaserJet IIP personal printer.

7 Buy 7 HP Vectra PCs, you get HP's newest laser printer—LaserJet III—free!

MORE Buy more HP Vectra PCs, get more free HP printers.



Powerful, yet incredibly easy to use.

Hewlett Packard Calculators

	List	Sale
HP48SX	$350	$265
HP82240B Infra-Red Printer	$135	$99
HP28S	$235	$165
HP12C	$95	$69

HEWLETT PACKARD
Authorized Full Service Product Dealer

"1989 Outstanding Performance Award"
"1988 Dealer of the Year"
"1986 Outstanding Performance Award"

EDUCATIONAL DISCOUNTS AVAILABLE

dav tech **Computer Center**

(213) 463-3001

Fax (213) 469-7255

We will beat any authorized dealer advertised price.
All prices mentioned are cash discounted.
Free Parking in Rear

6314 Hollywood Blvd. (at Vine), Los Angeles, CA 90028

HARD DRIVE REPAIR
AT AFFORDABLE PRICES

$5 OFF
Return coupon and get $5 off on repair

- 20-29 MB $85
- 30-39 MB.....105
- 40-49 MB.....135
- 50-85 MB.....165

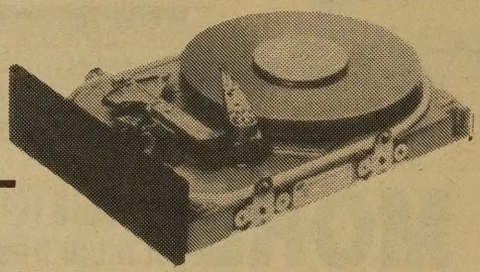
For drives not listed, please call

Avoid Costly Consulting Fees
Call Our Customer Service

- Flat Rate by MB
- Class 100 Clean Room
- 120 Day Warranty
- Quick Turnaround
- **Data Recovery**

HARD DRIVE SALES

20 MB SPECIAL
$99 WITH TRADE-IN



10 MB KIT.....$120
20 MB KIT.....160
30 MB KIT.....210
All Kits Include Controller Card & Cables

120 Day Warranty on all Advertised Products
Ask For Sales Department

SIM-TRADE CO.

8040 Remmet Ave. #1, Canoga Park, CA 91304
(818) 703-5155
FAX (818) 703-5964

PRODUCT-ORIENTED TABLE OF CONTENTS

As a new service to our readers, we offer this alternative table of contents, with the information organized by product and machine type.

UNIX

UNIX Talks Break Down 18

UNIX Column 62
By Bennett Falk
AT&T UNIX, Berkeley UNIX, mutant variants, the POSIX standard, and resulting confusion.

UNIX Expo West Preview
Partial List Of Exhibitors 44
Schedule Of Events 46
Expo Floorplan 46

MS-DOS

Shopping For VGA 54
By Jim Meyer and Dan Burleson
Comparison Of Six Popular VGA Monitors 56

DOS Software Reviews:
Impress 80
Crosstalk For Windows 84
Playroom 86
The Duel (Test Drive II) 90
Halls Of Montezuma 92

IBM And Compatibles User Groups 116

MACINTOSH

Networking The Mac Office: Exchanging Notes And Files With QuickMail 48
By Mary Eisenhart

Mac Game Reviews
Playroom 86
Cosmic Osmo 90
The Duel (Test Drive II) 90
Halls Of Montezuma 92

MacWorld Roundup 98

Mac User Groups 118

NETWORKS

Local Area Networks 40
By Wayne A. Yacco
Good experiences with LANtastic.

The Portable LAN 52
By Nancy Comstock
How Citibank and the US Court of Appeals made their operations more efficient with Altima portables.

LAPTOPS

Computing On The Go ... 36
By Ed Kahn
A series for the outbound computer user on portable machines and using them with your office system. This month: better keyboards for portables, and Tandy's bargain-priced portable word processor.

AMIGA

Amiga Column 58
By Matthew Leeds
It's here! The Amiga 3000.

Amiga User Groups 116

Amiga Associations 116

ATARI

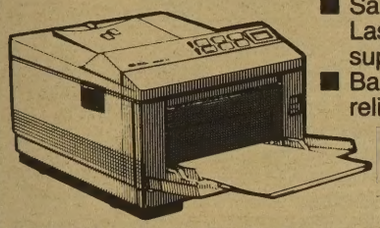
Atari ST Column 70
By David Hawkins
Public domain and shareware programs for the ST.

ABOUT THE COVER...

Our cover image was created by William Salit Design using Adobe Photoshop color editing software. They began with six 35mm slides that were scanned at DPI of San Francisco. Building the background first, they selected the sky, the mountains, and then the rocky plains from separate scans. The images were partially overlapped and the edges were blended using both the blur filter and the blending tool. They then layered silhouetted objects from several slides, including the Victorian facade, the cowboy, and the flowers, which were taken from Photoshop's own tutorial. The file was output to negatives on a Linotronic 200 by The Typesetting Shop of Oakland. For more information: William Salit Design 415/558-9215; DPI 425/882-9961; Steven Baratz Photography 415/863-3353; The Typesetting Shop 415/654-5404.

DAV TECH COMPUTER CENTER

LaserJet Series IIP



- Most affordable HP LaserJet printer
- Publication-quality output
- Same wide range of HP LaserJet software and font support
- Backed by HP's reputation for reliability and support

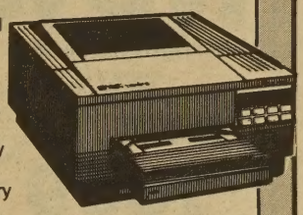
$940
Including Toner

NEW

HP LaserJet III

- Resolution Enhancement technology sets a new standard for desktop laser print quality
- Scalable typefaces and more fonts—all built-in
- Faster graphics printing with integrated HP-GL/2 vector graphics
- PCL 5 printer language with enhanced page formatting features
- HP LaserJet Series II printer compatibility
- Quick, quiet 8 page per minute printing
- PostScript, cartridge, and Epson FX/IBM Proprinter personality cartridge
- Cost effective memory expansion

In Stock



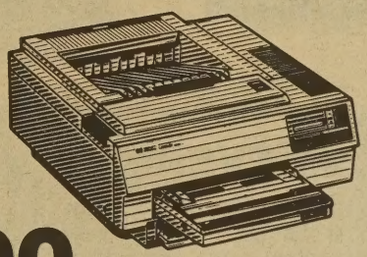
PaintJet XL
Color Graphics Printer

- Fast speed print
- Automatic sheet feed
- Image enhancement features
- Software & hardware support
- HP reliability
- Enhanced font capability
- A & B size format

$1690
Including Cable

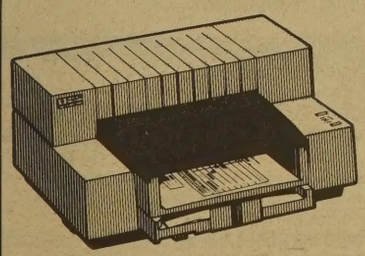
LaserJet Series II

- High resolution laser output
- Fast, quiet, easy operation
- Extensive software support
- World's leading laser desktop printer



$1290
Including Toner & Cable

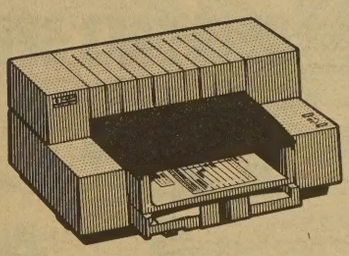
DeskJet Plus Printer



- 300 dpi resolution
- 4 page per minute laser quality
- Serial/parallel interface

$630
Rebate $150
$480

DeskWriter



- With Appletalk & serial connectivity
- Additional fonts
- Spooling support
- 300 DPI Apple printer

$799

HEWLETT PACKARD
Authorized Full Service Product Dealer

"1989 Outstanding Performance Award"
"1988 Dealer of the Year"
"1986 Outstanding Performance Award"

EDUCATIONAL DISCOUNTS AVAILABLE

dav tech Computer Center

(213) 463-3001

Fax (213) 469-7255

We will beat any authorized dealer advertised price.
All prices mentioned are cash discounted.
Free Parking in Rear

6314 Hollywood Blvd. (at Vine), Los Angeles, CA 90028

COMPUTER WIZ

(213) 371-6553
18506 Hawthorne Blvd.
Torrance, CA 90504

"THANK YOU" FOR CALLING

NOW

AST PREMIUM
386SX/16

$1669

i486™ Upgradeable

AST COMPUTERS
(PREMIUM 286)

w/20MB/40MB $1299/1399
(Bravo 286) 640KB
DOS 3.3 1.2M FL 779
(Bravo 386SX) 1359
(386C/20MHz) . . . . . CALL
(386/25MHz) 3350
(386/33MHz) 3950

AST 486/25MHz
w/2MB, 150MB Hard Drive

$6599

486/25 TOWER

AUTHORIZED DEALER
AUTHORIZED SERVICE CENTER • **IN STOCK • CALL**

EVEREX
COMPUTER SYSTEMS DIVISION

STEP 286/12MHz. $1199
STEP 386/20MHz 2450
STEP 25MHz/33MHz. . BEST PRICE
AGI 386SX/16MHz. 1299
AGI 386/20MHz. 1550

COMPAQ

DESKPRO 386-20E 40MB. . . . $3750
DESKPRO 386-25MHz-110MB. 6399
DESKPRO 386-33MHz . . . . . CALL
DESKPRO 286E-40MB. 2399

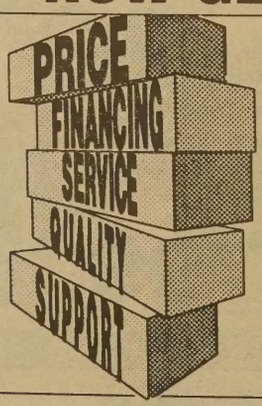
CALL FOR HEWLETT PACKARD
EPSON • PANASONIC • TOSHIBA

ALR 286/386
LOWEST PRICE

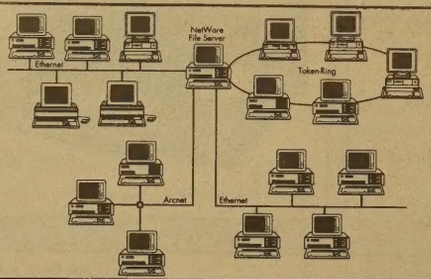
IBM

30-286 w/30MB . . $1789
50z 30/60MB 2189/2579
55SX 30/
60MB 2635/2965

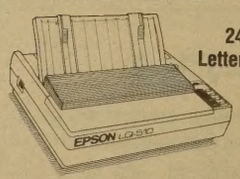
NOW GET THE BEST FOR LESS



NOVELL NETWORKS SPECIALIST



EPSON®
LQ-510



24 PIN
Letter Quality

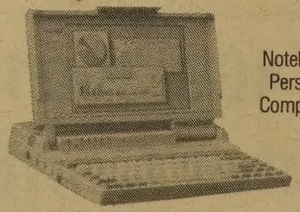
Save $200

$325
List Price $529

NEW

LOW PRICE LEADER

T1000SE.



Notebook
Personal
Computer

TOSHIBA
GREAT LAPTOPS

Southern California's Computer Magazine
MICROTIMES

BPA

PUBLISHER/EDITOR
Dennis Erokan

ASSOCIATE PUBLISHER
Chuck Stanley

CREATIVE
CREATIVE DIRECTOR Lee Ann Nelson
MANAGING EDITOR Mary Eisenhart
ASSISTANT EDITOR Michael Robin
PRODUCTION MANAGER Doug Boone
ADVERTISING ART DIRECTOR Jean Stirpe
ASSISTANT PRODUCTION MANAGER Sheryl Manchester
SENIOR DESIGNER Lisa Lusk
PRODUCTION ASSISTANT Mary Beth De Santis
ART STAFF Jennifer Bagwell, Donna Bogener, Heather Roche, Lisa Spencer, Vena W. Tse
TRAFFIC ASSISTANT Kim Nies
CAMERA OPERATOR John Moorehead
NEWS EDITOR Paul Hoffman
PROOFREADER Carolyn Keating
CONTRIBUTING EDITORS John C. Dvorak, Bennett Falk, David Hawkins, Matthew Leeds, Michael Markowitz, Brock Meeks, David Morgenstern, Birrell Walsh, Jim Warren, Wayne A. Yacco
CONTRIBUTING WRITERS Sue Albert, Robert D. Athey, Jr., John Perry Barlow, Lenny Bailes, Robert Beauchamp, Sharon Fisher, Steve Guttman, Ed Kahn, Helmut Kobler, Woody Liswood, Aubrey Pilgrim
CONTRIBUTING PHOTOGRAPHERS Ken James, Michael Jay, Pat Johnson, Jim Marshall
TYPESETTING The Typesetting Shop, Inc.

ADVERTISING
NATIONAL ACCOUNT DIRECTOR Bill Reefer
SOUTHERN CALIFORNIA SALES MANAGER Jane Shepherd
SENIOR ACCOUNT DIRECTORS Barry Green (Northern California), Mindey Morrison (Southern California)
ACCOUNT EXECUTIVES Marty Gillow, Marc Hoch, Gary Hooks, Tracy Longo, Jennifer Walsh
ASSISTANT TO THE ASSOCIATE PUBLISHER Amy Barrett
L. A. OFFICE MANAGER Sally Engelfried
L. A. ADMINSTRATIVE ASSISTANT Deborah Daiken

ADMINISTRATION
CHIEF ACCOUNTANT H. Jill Love
ACCOUNTING Brian DeLuca, Shanon Graham-Renta, Teri Hawkins, Leslie Munson, Brian Murray
CREDIT MANAGER Doug Morgan
OFFICE MANAGER Erica Stein-Oakley
ADMINISTRATIVE ASSISTANTS Sandra Lloyd, Vicky Mendoza

DISTRIBUTION
DISTRIBUTION MANAGER John Erokan
Assistant Manager/LA Art Holland
DISTRIBUTION Dennis Anderson, Gerri Anderson, John Clefstad, Roe Eyth, Danny Fernandez, Frank Grygus, Mike Jett, Kirk Lanier, Juan Lau, Jac Michanovic, Robbie Myers, Racks-Free Distribution, Joseph Rafalo, John Dimas Rezendes, SDS, Alan Spector, Christie Wersen
MICROTIMES DISTRIBUTION HOTLINE (415) 825-9565
MICROTIMES FOUNDERS Dennis Erokan, Don Hamilton, Pat Hamilton

BAM PUBLICATIONS, INC.
Dennis Erokan, President
Arthur L. Magnus, Chief Financial Officer

This Vol. 7 No.5, April 30,1990, Whole No. 69 MicroTimes, California's Computer Magazine, is published by BAM Publications, Inc., 5951 Canning St., Oakland, CA 94609. Phone Advertising Office (415) 652-3810. Los Angeles Office, 1800 N. Highland, Suite 506, Hollywood, CA 90028. Phone (213) 467-7878. San Jose Office, 36 Harold Ave., Suite 2, San Jose, CA 95117. Phone (408) 244-4400. Anaheim Office, 800 S. Brookhurst, Suite 1F, Anaheim, CA 92804. Phone (714) 776-2900. MicroTimes™ is © 1989 by BAM Publications, Inc. Subscription rates: 12 issues, U.S.: 3rd Class $24 (Allow 8 to 4 weeks for delivery), 1st Class $50 (Allow 1 to 2 weeks for delivery. MEXICO & CANADA: Surface Mail $40 (Allow 4 weeks for delivery). Air Mail $65 (Allow 1 week for delivery). OVERSEAS: Surface Mail $40 (Allow 6-10 weeks for delivery), Air Mail $160 (Allow 1 week for delivery). To receive sample issues, please send $2 ($4 for overseas) to cover postage costs. Back issues are $4 each. All rights reserved. Reproduction in whole or in part without permission of Publisher is strictly prohibited. The staff and management of MicroTimes do not advocate or encourage the use of any product or service advertised herein for illegal purposes.

COMPLETE 386SX SYSTEM $1295

WITH 40MB IDE HARD DRIVE ! ONLY

Standard equips with the latest technology of IDE hard drive, gives you ultimate performance in its class. (Performance: TRK: TRK seek 3.75 MS, DOS file transfer speed 145 K/sec) more than 300% faster than the past technologies — MFM & RLL.

Standard System Feature

- Genuines Intel **80386SX** Microprocessor.
- **8/16** MHz ϕ Wait State dual speed hard/software selectable.
- **1 MB RAM** expandable to a system total of **16 MB.**
- **40 MB IDE** hard drive (1:1 interleave, 28ms).
- **5.25" 1.2 MB** or **3.5" 1.44 MB** diskette drive.
- Mono graphics controller, 12" high-res amber display **MONITOR** with tilt/swivel base.
- 102 keys enhanced **ALPS** switch tactile/click keyboard.
- 2 high speed serial ports plus one parallel and one game ports.
- **80387SX** math coprocessor support.
- Case with security lock & led indicators.
- Built in real time clock & calendar.
- Dual diskette and hard drive controller.
- 8 industry standard expansion slots.
- **200-WATT** power supply.
- VGA systems include the high performance 16-bit **PLATINUM** video adapter and **MONITOR**.

Mono 12" Sys. $1295 VGA 640×480 Sys. $1675
Super VGA 1024×768 Sys. $1825

COMPLETE 386-25 MHz HARD DRIVE SYSTEM ONLY $1635

Standard equips with the genuines intel 80386-25 MHz microprocessor. 40MB IDE hard drive. (1:1 interleave, 28ms) 300% faster than MFM & RLL hard drive. Standard feature as the 386SX system above.

Mono 12" Sys. $1635 VGA 640×480 Sys. $2015 Super VGA 1024×768 Sys. $2165

LOGOS 5001 130 KEY KEYBOARD

The real keyboard terminator you can find this century is now presenting:

- 100% **PC/PS2, NOVELL ELS** compatible.
- **ALPS** switch, adopting click, tactile feeling. The highest cost, the best quality, the most comfortable feeling you can enjoy.
- Double shoot keycaps and keyswitch to guarantee **TEN MILLION** times typing.
- Special offer of "2 set of 12 function keys" on upper and left position to increase typing efficiency.
- 8 direction arrow keys for choice to move cursor 12 kind of speed.
- Build in a **CALCULATOR** and offer keyboard/calculator switch to choose function you need.
- Funishing calendar and extra 5 kinds of the most popular function description plates necessary.
- Offer an extra **MACRO** key.
- Extra "✱ " key for software copy operation (✱.✱).

VGA 1024×768 SPECIAL

Logos platinum VGA 16 bit **1024×768** card gives you compatibility and performance that no other can match.

- 100% compatibility with the **IBM** compatible mother board.
- Memory expandable to 512K.
- Supports a wide rang of monitor:
  - **MULTISYNC** monitors
  - **PS/2** monitors
  - **VGA, EGA, CGA, MDA** & **HERCULES** monitors
- Fully supports:
  - All **IBM VGA** modes to the register level
  - **IBM EGA, CGA** and **MDA** modes to the register level
  - 80-column text modes in 30, 43 and 60 rows
  - 132-column text modes in 25, 30, 43 and 60 rows
  - Including numbers of the popular extended drivers
  - High-resolution graphics display includes:
    640×480 256 colors
    800×600 256 colors
    1024×768 256 colors

30-DAY MONEY BACK GUARANTEE. (LESS SHIPPING)
ONE FULL YEAR WARRANTY ON PARTS AND LABOR.
VISA & MASTERCARD WELCOME.
3% SURCHARGE FOR CREDIT CARD ORDER.

AMERICAN COMPUTER TECHNOLOGIES CORP.

809 So. Lemon Ave. • Walnut, CA 91789 • **(714) 869-7789** • Fax (714) 869-7980

CA CASES w/PS

XT w/LED/Slide	68.00
XT w/LED/DTK Look	70.00
Slimline PS2/4 Open Bays	99.00
Baby AT/XT 5 Bay/3 Open	89.00
Baby AT/3 Open Bays Total	90.00
Baby AT/3 Bay Front Switch	105.00
Baby AT/5 Bay Front Switch	115.00
Baby AT/4 Bay Solid Nickel	120.00
Mini Tower/4 Open Bays Total	120.00
Mini Tower/5 Bays/4 Open	125.00
24" Tower/4 Open Bays Total	125.00
Full Size AT/5 Bays/3 Open	95.00
Full Size Tower/7 Bays Total	169.00

MOTHER BOARDS

Protek XT-10MHz/1 MEG	59.00
Protek XT-10MHz/4 Bank	59.00
Protex XT-10MHz/2 1/2 Bank	59.00
Protek XT-12MHz/(44256)	65.00
Protek 286 12MHz VLSI/8 Slot	145.00
Protek 386-16MHz SX w/CPU	325.00
Protek 386-20MHz w/o CPU	315.00
Protek 386-25MHz w/o CPU	345.00
Protek 386-25 Caching w/o CPU	560.00

CONTROLLER CARDS

XT FDC w/Cable, 2/Ports	15.00
AT FDC w/Cable, 2/Ports	29.00
XT/AT FDC w/Cable, 4 Ports	35.00
WD XT-GEN HDC w/Cable	50.00
XT WX-27 HDC RLL w/Cable	55.00
Protek AT HD/FDC MFM/2:1/CAB	79.00
Protek AT HD/FDC MFM/1:1/CAB	89.00
WD 1006V-SR2 AT HDC/RLL/1:1	130.00

I/O CARDS

Protek-AT 2/SER, 1/PAR, 1/Game	29.00
Clock Card	14.00
XT/AT Game Port, 2/Ports	14.00
Protek-Parallel Port Card	14.00
Protek-Serial Card (COM 1-2)	14.00
Protek-Serial Card (COM 1-4)	25.00
Protek-XT Multi I/O (FD/S/P/G/CC)	35.00
Enhanced XT Multi I/O (For 1.44)	57.00

KEYBOARDS

BTC 101 Key Tactile Enhanced	45.00
Chicony 101 Key Enhanced	47.00
Protek 101 Key Large/Tactile	45.00
Lite-on 101 Key Small/Tactile	44.00
Focus FK-2001 w/Plastic Cover	59.00
Focus FK-3001 w/Calculator	69.00

MONITORS

12" Hyundai Amber T/S	82.00
14" Samsung Flat Paper White	125.00
14" Goldstar RGB/Color T/S	215.00
14" Hyundai EGA T/S	329.00
14" Goldstar VGA	379.00
14" NEC 2A Super VGA	550.00
14" Samsung Multi-Sync T/S	455.00
14" NEC 3D Multi-Sync	670.00

MISCELLANEOUS

Printers, Modems, Software	
Panasonic 1180 (9 Pin, 192 CPS)	185.00
Panasonic 1124 (24 Pin, 200 CPS)	310.00
1200 BAUD/INT (Databyte)	59.00
Speedlink 2400 BAUD/INT	79.00
DOS 3.3 w/GW Basic	58.00
DOS 4.01 w/GW Basic	62.00

For memory prices or dealer, OEM, Distributor Discounts, Please call, ask about our monthly specials.

VIDEO CARDS

Protek-Monographic W/PP	28.00
Protek-Color Graphic, PP	31.00
Protek-EGA W/PP (640x480)	69.00
Protek-VGA 8 Bit (800x600)	89.00
Protek-VGA 16 Bit (256K)	129.00
Protek-VGA 16 Bit (512K)	169.00

FLOPPY DISK DRIVES

Mitsumi 360K/5.25/Beige	65.00
Mitsumi 1.2M/5.25/Beige	76.00
Mitsumi 720K/3.5/Beige	69.00
Mitsumi 1.44M/3.5/Beige	79.00

HARD DISK DRIVES

Kyocera MFM/20MB/65MS/3.5	210.00
Kyocera RLL/30MB/65MS/3.5	225.00
Seagate MFM/40MB/28MS/5.25	339.00
Mitsubishi MFM-40MB/RLL-60MB	389.00
Seagate MFM/80MB/28MS/Full Ht	559.00
Micropollis MFM-70/RLL-104MB	649.00
Conner CP-3184 IDE-80MB W/Contr.	639.00
NEC D5655 ESDI 150MB W/Contr.	1085.00

POLICIES

- Full 1 year warranty (Parts & Labor).
- Sales Mon-Fri 8:30am - 5pm/Sat 10am - 4pm.
- CODs must be Cashier's CK, or Money order.
- We accept VISA and Master Card (add 2%).
- We accept Corporate or School P.O.s on approved credit.

Syntax

Manufacturing & Distribution

SYNTAX COMPUTER, INC.

1-800-552-8900

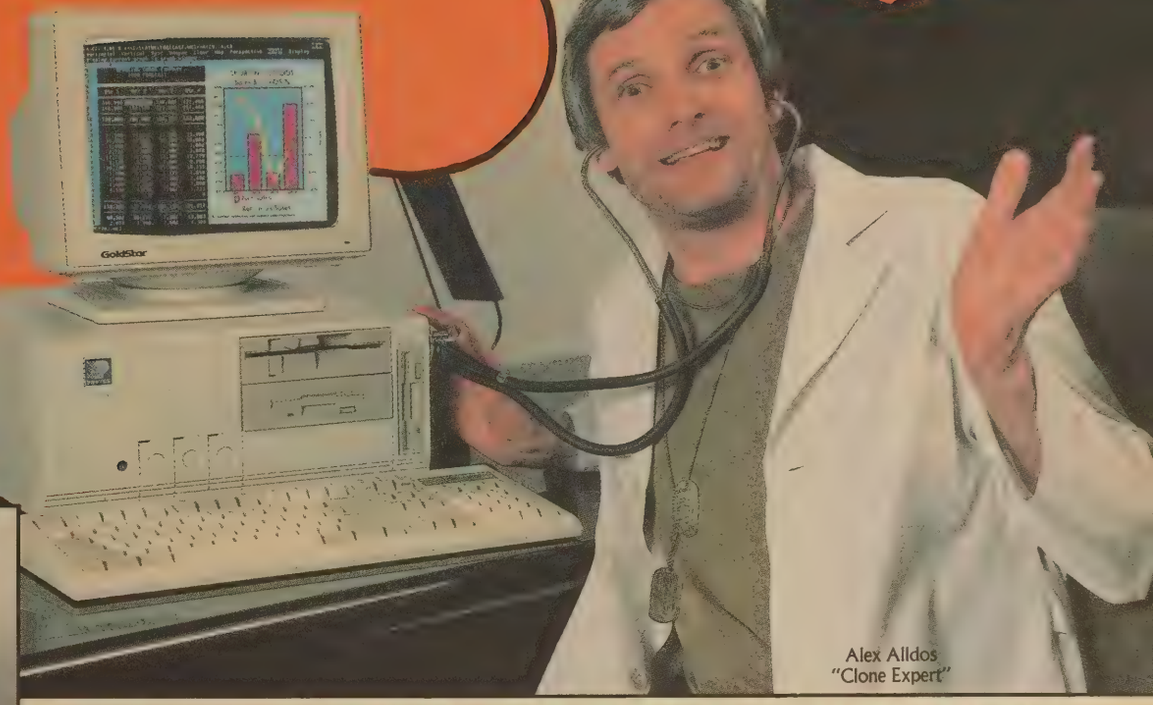
(213) 262-1300/Fax (213) 261-1300

5680 BANDINI BLVD. BELL, CA 90201

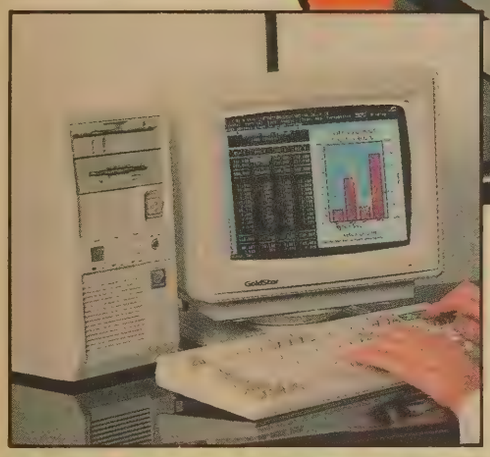
Prorell's
Powerful Pulse

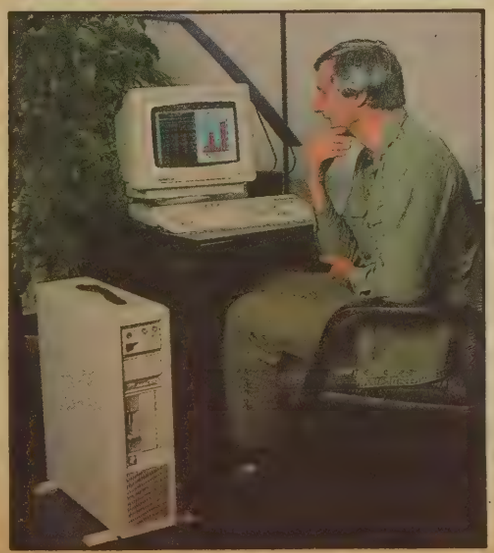
Syntax

BLOWOUT $499
COMPLETE 10MHz 8088
Includes:
640K RAM ■ 360K Floppy Drive
Mono Graphics Card ■ Dual Floppy
Control ■ Monitor ■ Keyboard ■ Serial
Parallel ■ Game ■ Mouse Ports
Slimline Case ■ Clock/Calender



Alex Alldos
"Clone Expert"





PROTEK-12
286-SYSTEM

- 512K RAM-100ns
- 1.2 or 1.44MB Floppy
- Graphics Card
- Mono-Monitor
- 101 Key Keyboard
- 1:1 HD/FD Contr.
- 2 Ser/2 Par/1 Game
- 200W Power Supply
- Mini Vertical Case
- VLSI Chipset
- AMI Bios
- Up to 4MB on board
- 5-16bit/3-8bit Slots
- EMS, Network Compat.
- All Types of Memory
- 6/8/12 MHz Clock Speed
- 0 or 1 Wait State

$685

PROTEK-16SX
386 SXSYSTEM

- 1MB RAM-80ns
- 1.2 or 1.44MB Floppy
- Graphics Card
- Mono-Monitor
- 101 Key Keyboard
- 1:1 HD/FD Contr.
- 2 Ser/2 Par/1 Game
- 200W Power Supply
- Mini Vertical Case
- True 16MHz CPU
- AMI Bios
- Up to 4MB on board
- 6-16bit/2-8bit Slots
- EMS, Network Compat.
- SIMM Memory
- 8/16 MHz Clock Speed
- 0 or 1 Wait State

$999

PROTEK-20/25
386 20MHz or 25MHz

- 1MB RAM-80ns
- 1.2 or 1.44MB Floppy
- Graphics Card
- Mono-Monitor
- 101 Key Keyboard
- 1:1 HD/FD Contr.
- 2 Ser/2 Par/1 Game
- 200W Power Supply
- Baby Desktop Case
- True 20 or 25MHz CPU
- AMI Bios
- Up to 8MB on board
- 1/32bit/4-16bit/3-8bit Slots
- EMS, Network Compat.
- USES SIPP Memory
- 16/20/25 MHz Clock Speed
- Page Mode Interleave

$1,335/$1,549

PROTEK-25C/33C
25/32K or 33/64K Cache

- 1MB Dram-80ns
- 1.2 or 1.44MB Floppy
- Graphics Card
- Mono-Monitor
- 101 Key Keyboard
- 1:1 HD/FD Contr.
- 2 Ser/2 Par/1 Game
- 230W Power Supply
- Full Size Tower
- True 25 or 33 MHz CPU
- AMI Bios
- Up to 16MB 32 bit
- 1-32bit/5-16bit/2-8 bit Slots
- EMS, Network Compat.
- SIPP & DIP Memory
- 25/33 MHz Clock Speed
- Page Mode Interleave

$1,799/$1,999

UPGRADES

MONITORS:
(Includes Interface Card)

(No Monitor and no Video Card)	-$80
CGA (640x200 in 16 Colors)	$169
EGA (640x350 in 16 Colors)	$359
VGA (640x480 in 256 Colors)	$409
MultiSync 800x600 in 256 Colors	$619

HARD DRIVES: FOR XT ADD $40.00

20MB	$200
30MB	$240
40MB	$325
65MB	$425
80MB	$565
110MB	$725

MEMORY:

640K for 286	$54
1MB for 286	$90
2MB for 286	$210
4MB for 286	$430
2MB for 386	$130
4MB for 386	$390
8MB for 386	$910

CO-PROCESSORS:

80287-10	$225
80387-16SX	$320
80387-16	$350
80387-20	$410

*Upgrades are sold with systems only

FLOPPY DRIVES:
(3.5" Includes Kit)

With No Floppy Drive Installed	$60
1.44 3.5" Mitsumi	$72
1.2 5.25" Mitsumi	$72
720K 3.5" Mitsumi	$65
360K 5.25" Mitsumi	$65

MISCELLANEOUS:

Single Parallel, Serial or Game	$14
Hi-Resolution Mouse	$65
1200 Baud Modem	$60
2400 Baud Model	$85
DOS Latest Versions	$60

POLICIES

- Free Technical Support.
- 15 day money back guarantee.
- Full 1 year warranty (Parts & Labor).
- Sales Mon-Fri 8:30am - 5pm/Sat 10am - 4pm.
- CODs must be Cashier's CK, or Money order.
- We accept VISA and Master Card (add 2%).
- We accept Corporate or School P.O.s on approved credit.

Manufacturing & Distribution

SYNTAX COMPUTER, INC.

1-800-552-8900

(213) 262-1300/Fax (213) 261-1300

5680 BANDINI BLVD. BELL, CA 90201

Celebrity Look-Alike Marv Cline. Not to be construed as a celebrity or an advertisement or product approval by any celebrity. Furniture by Bif of Korea. PS2 is a trademark International Business Machines.

INDUSTRY INSIGHT

BY PAUL HOFFMAN

MOTOROLA AND HITACHI LAWYERS THUMB NOSES AT JUDGE

Why settle a silly lawsuit when you can run up huge legal bills and jeopardize US-Japan high tech consortiums? That is the stance that lawyers for both Motorola and Hitachi took when the judge in their chip copyright infringement case attempted to force them to settle their differences out of court.

The case involves the design and implementation of Motorola's 68030 and Hitachi's H8 microprocessors. The 68030 is used in many Apple Macintosh computers as well as many low- and middle-range UNIX computers manufactured by many companies. Hitachi's H8 is used mostly for disk and printer controllers, mostly by Japanese and European manufacturers.

Even though the two companies have a wide-ranging technology trade agreement, Motorola unexpectedly sued Hitachi in January of 1989 for infringing on their copyrights and using trade secrets to make the H8. Hitachi immediately countersued and claimed that Motorola infringed on Hitachi patents.

The judge in the case, Federal District Court Judge Lucius Bunton in Austin, Texas, forced both sides into a super-fast trial in order to get both sides to agree out of court. The judge repeatedly criticized the lawyers for both sides for being more interested in litigation than in settling the suit. After the three-day trial, the judge ruled that both sides had violated each other's copyrights and gave them relatively light fines given the number of chips involved: Motorola had to pay Hitachi $500,000 and Hitachi had to pay Motorola $1,900,000. Part of the ruling read, "The parties would have saved time, money, feelings and relations had they curbed their emotions and sat down to settle their difference out of court."

The judge then added a twist that shocked everyone: he ordered both sides to stop shipping their infringing chips. This, of course, would hit Motorola much harder than Hitachi, but it was widely speculated that it would force both sides to quickly settle their differences out of court. In his ruling, Judge Bunton was openly critical of the two companies for not settling earlier.

The day after the announcement, the computer press was filled with predictions of a quick settlement. The presidents of many companies reliant on the 68030 called Motorola and were assured that their supply would not be seriously affected. Instead, Motorola's lawyers decided to appeal the parts of the ruling that went against them, and Hitachi's lawyers did the same. No one indicated that any serious discussions took place.

Facing the intransigence on both sides, the judge stayed his non-distribution order until at least June 18. Since it was clear that neither side was going to settle and was more interested in legal maneuvering than in putting the case behind them, Judge Bunton allowed them to continue to sell the infringing chips.

He stated again that he hoped the parties could reach an out-of-court settlement, although many industry sages now think that it may be impossible, since the attorneys seem to be in charge of the case.

Paul Hoffman is an industry analyst who has been covering microcomputer technology for ten years. He can be reached on USENET (phoffman @well) and MCI Mail (264-3171). He also writes popular microcomputer books.

LOTUS ANNOUNCES BUSINESS CONTACT DATABASES

If you thought that your mailbox and home phone had been saturated by every possible mass marketer, think again. In the next six months, Lotus will release two databases

DREAD APRIL 1 VIRUS DETECTED AT MICROTIMES

Amused readers have brought it to our attention that in last month's news column we described the Macintosh IIfx as having an 80386 CPU. This would undoubtedly come as something of a shock to Apple, which has been using Motorola chips since day one and uses the 68030 in the IIfx. Intel, which makes the 80386, would probably find this alternative explanation for the chip shortage interesting.

We're not quite sure how this assertion got past two editors who should have known better. We're taking our brains to the virus clinic. We hope this unplanned entertainment has not caused problems for anybody.

PROFIT FROM OUR EXPERIENCE...

the experience and maturity of a company that has manufactured thousands of flawlessly performing systems. We will not sacrifice quality in an effort to be the lowest bidder.

Binary Computer Corp. is dedicated to providing systems optimized for the customers need ... not our profit margin. We truly believe that Binary systems provide the customer with the best balance of performance, reliability and price.

Remember all systems come complete - no hidden cost!

BINARY
COMPUTER CORPORATION
MANUFACTURE DISTRIBUTOR & SERVICE

15179 Springdale,
Huntington Beach, CA 92649
Tel: (714) 894-6827
Fax: (714) 894-0196
Hours: Mon-Fri 9:00 - 6:00
Sat 10:00 - 4:00

NEW ! All Binary Systems now feature ...
800 x 600 lines Super VGA output. Super VGA provides 50% higher resolution than standard VGA, thus allowing you to run all the new high resolution software.

All systems include:

- Guaranteed software compatibility.
- One year parts & labor warranty.
- FCC approval.
- All BINARY systems have built-in...
- LIM 4.0 Expanded memory capability (Required by many new software programs)

Binary 286
AT - 12 mhz
Super VGA
Color Monitor
VGA Card (16 bit)
40MB Hard Disk (28ms)*
1:1 Interleave Controller
1.2 MB, 5.25" Dr.
1.44 MB, 3.5" Dr.
2 Serial/1 Para./1 Game
Clock/Calendar
1 MB Ram memory
Enhanced Keyboard
$1595

Binary 386-SX
16 mhz 32-Bit CPU
Super VGA
Color Monitor
VGA Card (16 bits)
40 MB Hard disk (28ms)*
1:1 Interleave Controller
1.2 MB, 5.25" Dr.
1.44 MB, 3.5" Dr.
2 Serial/1 Para./1 Game
Clock/Calendar
1 MB Ram memory
Enhanced Keyboard
$1800

Binary 386
20 mhz 32-Bit CPU
Super VGA
Color Monitor
VGA card (16bits)
40 MB Hard disk (28ms)*
1:1 Interleave Controller
1.2 MB, 5.25" Dr.
1.44 MB, 3.5" Dr.
2 Serial/1 Para./1 Game
Clock/Calendar
1 MB Ram memory
Enhanced Keyboard
$2090

Binary 386
33 mhz 32-Bit CPU
Super VGA
Color Monitor
64K Cache memory
VGA Card (16 bits)
40 MB Hard disk (28ms)*
1:1 Interleave Controller
1.2 MB, 5.25" Dr.
1.44 MB, 3.5" Dr.
2 Serial/1 Para./1 Game
Clock/Calendar
1 MB Memory
Enhanced Keyboard
$2795

*** 64 MEGA BYTE (22MS) HARDRIVE UPGRADE ADD $120**

Printers W/Cable:

Panasonic P1124	$ 315
Panasonic P1624	$ 475
H.P. Laser Jet IIP	$ 995
H.P. Laser Jet II	$1590
H.P. Laser Jet III	$1670
H.P. Desk Jet Plus	$ 690

Miscellaneous:

Logitec Hi-Res. Mouse	$ 80
Logitec Trackman	$ 98
2400B Modem (Internal)	$ 95
DFI L/M 4.0 Memory Board	$ 89
Micropolis 72MB HD	$575
Seagate 40MB HD	$319

C.A.D.

Calcomp Tablet 12 x 12	$360
Summasketch Tablet 12 x 12	$370
Math Coprocessor 287/387	$215/365
NEC Multisync 4D/5D	$1115/2350
Nanao 16" Monitor	$990
Paradise 1024 x 768 Video (512K)	$285

containing detailed information on 80 million households and 7.5 million companies. The data will be searchable on a myriad of criteria, allowing the searcher to target potential customers to a very fine degree.

The data will be available at a lower-than-ever price, making it a boon for small-and medium-sized businesses; it also means that the "targets" listed in the databases are assured of receiving hundreds more solicitations.

The new databases, called Lotus MarketPlace, put a huge amount of information on a CD-ROM. The packages also contain an easy-to-use Macintosh front-end that makes it simple for the user to pare down the list to a desired size.

Apple is ecstatic that Lotus chose the Mac as the platform for MarketPlace, since it will be a good reason for even more small businesses to buy a Mac.

Each database will cost $695 for up to five thousand names generated; you can get more names by calling Lotus and paying for them in groups at a rate of $80 per one thousand additional names. Lotus will keep open accounts for all users so that they can easily register for more names at any time.

'A huge advantage to the way that Lotus set up the program is that you can navigate through the data freely, checking how many names match your criteria, without spending any money. If you have a target for the size of audience, you can experiment with different sets of criteria without incurring any costs. All that is required is a Mac and a CD-ROM player.

Apple is ecstatic that Lotus chose the Mac as the platform for MarketPlace, since it will be a good reason for even more small businesses to buy a Mac. It will also give users another good reason to buy a CD-ROM player. The names can be exported to a file or sent directly to a printer.

By the time that the program is available, Lotus expects that many Macintosh software vendors will have come out with software that lets their programs manage the names and addresses generated by the lists.

SOFTWARE PUBLISHERS ASSOCIATION GIVES ANNUAL AWARDS

In a slightly flamboyant gesture, the SPA announced its annual software awards one day after the Oscars. This year's winners represented a move towards actual excellence, not just programs that had generated lots of publicity.

SimCity, the city simulation from Maxis, won the most awards (three) for best simulation, best entertainment, and best curricular program. SimCity has been widely praised both for its ingenuity in getting users to think about city planning and for its fun approach to complicated simulations.

Eye Relief, the new large-type word processor from SkiSoft, got two awards for best word/text business application and best program for special needs.

The winners:

BUSINESS SOFTWARE AWARDS

Best New Business Software Product
Lotus Notes (Lotus Development Corp.)

Best Vertical Market Application
Personnel Policy Expert (Knowledge Point)

Best Business Application: Word or Text Orientation
EYE RELIEF Large-type Word Processor (MS-DOS) (SkiSoft Publishing Corp.)

Best Business Application: Numeric or Data Orientation
Quattro Pro (MS-DOS) (Borland International, Inc.)

Best Programming Language or Tool
THINK C (Symantec Corp.)

Best Utility/Communications Product
Lotus Magellan (Lotus Development Corp.)

CONSUMER SOFTWARE AWARDS

Best Fantasy Role-playing/Adventure Program
Space Quest III: The Pirates of Pestulon (Sierra On-Line, Inc.)

Best Sports Program
Hardball II (Accolade)

Best Simulation Program
SimCity, The City Simulator (Maxis)

Best Strategy Program
Populous (Electronic Arts)

Best Action/Arcade Program
WELLTRIS (Spectrum HoloByte)

Best Entertainment Program
SimCity, The City Simulator (Maxis)

Best Personal Productivity/Creativity Program
Quicken 3.0 (MS-DOS) (Intuit)

LIFETIME ACHIEVEMENT AWARDS

Alan Kay, Apple Fellow
Steve Jobs, NeXT

EDUCATION SOFTWARE AWARDS

Best Early Education Program
The Playroom (Brøderbund Software, Inc.)

Best Elementary Education Program
Math Shop Jr. (Scholastic Software)

Best Secondary Education Program
Math Blaster Mystery (Davidson & Associates, Inc.)

Best Home Learning Program
Where in Time Is Carmen Sandiego (Brøderbund Software, Inc.)

Best School Productivity/Creativity Program
Compton's Multimedia Encyclopedia (Networked) (Britannica Software, Inc.)

Best Special Needs Program
EYE RELIEF Large-type Word Processor (MS-DOS) (SkiSoft Publishing Corp.)

Best Curricular Program
SimCity, The City Simulator (Maxis)

GENERAL AWARDS

Best Technical Achievement
RealSound (MS-DOS) (Access Software)

Best Design Achievement
HP NewWave (Hewlett-Packard)

Best New Use of a Computer
Compton's Multimedia Encyclopedia (Networked) (Britannica Software, Inc.)

CRITIC'S CHOICE AWARDS

Best Business Program
MacroMind Director (Macintosh) (MacroMind)

Best Consumer Program
SimCity, The City Simulator (Maxis)

Best Education Program
The Children's Writing and Publishing Center (The Learning Company)

CITIZEN'S 200 GX
EASY TO USE.

EASIER TO BUY.
UNDER $300

• Color on Command.
It's never been easier to Print Like a Pro. With the feature-rich Citizen 200 GX, you get superior print quality in a nine-wire printer, a Color on Command kit option, 213 CPS for

• Command-Vue II makes it easy.
fast results, exceptional paper handling and more. The Citizen 200 GX is easy to use; with Command-Vue II, you can move effortlessly through 25 features with plain English prompts.

AVAILABLE AT THESE CITIZEN DEALERS

SIGNAL HILL

DATA DYNAMICS
2750 GUNDRY AVENUE
(213) 424-1172

TORRANCE

ADRAY'S
4140 PACIFIC COAST HIGHWAY
(213) 378-6777

SOFTWARE CENTRE
22543 S. HAWTHORNE BOULEVARD
(213) 378-0225

VAN NUYS

ADRAY'S
6609 VAN NUYS BOULEVARD
(818) 908-1500

COMPUTER HOUSE
7026 VAN NUYS BOULEVARD
(818) 786-3700

P.C. UPGRADE
16935 VANOWEN STREET
(818) 708-2853

VENTURA

ADRAY'S
6040 TELEGRAPH ROAD
(805) 654-0699

YORBA LINDA

KING TECH
19741 LOMBARDY LANE
(714) 779-9025

ALHAMBRA

ELCO COMPUTERS
213 SOUTH RAYMOND AVENUE
(818) 284-3281

ANAHEIM

ACADEMY MICRO CENTER
6838 SOUTH BROOKHURST STREET
(714) 772-9570

I.C. COMPUTER
2940 EAST LA PALMA AVENUE, #E
(714) 666-2223

P.C. AVENUE CORP.
3150 E. LA PALMA, SUITE H, I
(714) 666-8667

PRINTER CONNECTION
1831 W. LINCOLN
(714) 758-8832

CANOGA PARK

ADRAY'S
8349-8351 TOPANGA CANYON BOULEVARD
(818) 348-2600

CITY OF INDUSTRY

A-TRONICS
15703 EAST VALLEY BOULEVARD
(818) 333-0193

EL MONTE

REYES ELECTRONICS
1224 SANTA ANITA AVENUE, #C
(818) 575-0552

FOUNTAIN VALLEY

PH COMPUTER
16533 BROOKHURST STREET
(714) 775-3204

HAWTHORNE

5 STAR COMPUTER
4547 W. ROSECRANS AVENUE
(213) 675-5303

IRVINE

L.A. COMPUTER CENTER
ORANGE COUNTY
17777 D MAIN STREET
(714) 261-7878

LAWNDALE

L.A. COMPUTER CENTER
SOUTH BAY
17013 HAWTHORNE BOULEVARD
(213) 542-3501

LOS ANGELES

ADRAY'S
5575 WILSHIRE BOULEVARD
(213) 936-5118
(213) 935-8191

ADRAY'S
11201 W. PICO BOULEVARD
(213) 479-0797

COMPUKEY, INC.
12433 WILSHIRE BOULEVARD
(213) 820-8182

L.A. COMPUTER CENTER
WEST L.A.
12002 PICO BOULEVARD
(213) 478-0768

SOFTWARE XTRA
3959 WILSHIRE BOULEVARD
(213) 383-3517

MORENO VALLEY

MINCO
23675-B SUNNYMEAD BOULEVARD
(714) 242-3443

NORCO

COMPUTER MECHANIC
1778 4TH STREET
(714) 371-6381

NORTH HOLLYWOOD

PROCOMP COMPUTER
12503 SHERMAN WAY
(818) 982-0814

ORANGE

DATA BITS, INC.
1630 W. CHAPMAN AVENUE
(714) 938-0400

RANCHO DOMINGUEZ

SOFTWARE GALLERIA
19520 RANCHO WAY, SUITE 202
(213) 764-4291

RIVERSIDE

NATIONAL COMPUTER SUPPLIES
7107 ARLINGTON AVENUE, SUITE H
(714) 785-8797

SANTA ANA

ACP
1310 EAST EDINGER
(714) 558-8813

ADVANCED COMPUTER SYSTEMS
1714 E. MC FADDEN AVENUE, SUITE O
(714) 648-8325

CALIFORNIA COMPUTER DIST.
1261 S. LYON, SUITE 403
(714) 541-0444

SUPERCOMPUTER
2929 SOUTH HARBOR
(714) 754-1166

For a dealer near you call 800-441-2345 ext. 34

CITIZEN™

OPTOCAD

LA's Authorized VersaCAD Dealer

SAMSUNG SD630 286

12MHz, 60MB, MATH CO-PROCESSOR

SAMSUNG CQ4551 VGA MULTI-DISPLAY

SIGMA DESIGNS VGA GRAPHICS

$2195.00

PLOTTERS

CALCOMP 1023	A-D, CUT SHEET, 32IPS, 8-PEN	$3595.00
CALCOMP 1025	A-E, CUT SHEET, 32IPS, 8-PEN	$4795.00
CALCOMP 1043GT	A-E ROLL, 24IPS, 8-PEN, 120'	$8900.00
HEWLETT PACKARD	DraftPro DXL A-D Cut Sheet	$3495.00
HEWLETT PACKARD	DraftPro EXL A-E Cut Sheet	$4649.00
HEWLETT PACKARD	7595 DraftMaster I A-D	$6595.00
HEWLETT PACKARD	7596 DraftMaster II A-E	$8495.00

UNITED INNOVATIONS
"D" Size Pen Plotter
$2195.00

DIGITIZERS

KURTA IS/ONE 12x12	$ 389.00
KURTA IS/ONE 12x17	$ 625.00
KURTA IS/TERE 36x48	$2795.00
Now with 4-Button Puck & Pen Stylus	
NUMONICS 2205 12x12	$ 389.00
NUMONICS 2207 12x12	$ 749.00
NUMONICS 2206 12x12 / MAC	$ 399.00
NUMONICS 2200 44x60	$3745.00
Hewlett Packard Sketchpro 11x11	$ 459.00
CALCOMP 23120 12x12	$ 359.00
CALCOMP 23180 12x18	$ 690.00
CALCOMP 23240 17x24	$1645.00

OCE GRAPHICS

1824	A-D, CUT SHEET, 33IPS, .0005, 100K, 8-PEN	$3695.00
1825	A-E, CUT SHEET, 33IPS, .0005, 100K, 8-PEN	$4695.00
1834	A-D, SHEET & ROLL, 47IPS, .0005, 512K	$4695.00
1835-S	A-E, CUT SHEET, 47IPS, .0005, 512K, 8-PEN	$5995.00
1835-SR	A-E, SHEET & ROLL, 47IPS, .0005, 512K	$6975.00

PCG PHOTON Performer
1024 x 768 / VGA / Multi-Scan (20-50KHz)
Display List Processing 80,000vps

NANAO 9070S
16", 1024 x 768 / VGA / Multi-Scan

$1895.00

VersaCAD Design Special
CALL !!!

PROFESSIONAL DISPLAYS

HITACHI	HM4615D-BC 15", 1024X768, 48-52khZ	$1495.00
HITACHI	HM4115D-BA 15", 1280x1024, 61-65khZ	$1595.00
HITACHI	HM4119D-BL 19", 1024x768, 48-52KHz	$1995.00
HITACHI	HM4119D-BA 19", 1280x1024, 61-65khZ	$2095.00
HITACHI NISSEI SANGYO AMERICA		
CM2085M	20", Multisync, 1280x1024, 30-64KHz	$1945.00
NANAO		
FLEXSCAN 8060H	14", 1024x768, 20-50KHz	$ 599.00
FLEXSCAN 8060S	14", 1024X768, 20-50khZ, .28mm	$ 645.00
FLEXSCAN 9070S	16", 1024X768, 20-50khZ	$1049.00

GRAPHIC DISPLAYS

Samsung Monochrome	$ 85.00
Samsung Color (640x200)	$ 229.00
Samsung EGA (640x350)	$ 339.00
Samsung VGA (640x480)	$ 395.00
Samsung Multisync (800x600)	$ 499.00

GRAPHIC ADAPTERS

Paradise VGA Plus 16 800x600, 512k	$ 295.00
Paradise VGA Plus 800x600, 256k	$ 245.00
Paradise VGA Professional 800x600, 512k	$ 375.00
Orchid Technologies Designer 800 VGA / 256k	$ 249.00
Orchid Technologies Prodesigner VGA / 256k	$ 319.00
Orchid Technologies Prodesigner VGA Plus / 512k	$ 419.00

(213) 413-3796 (818) 780-4243

HACKER ELECTRONICS

Yesterday's Technology
Today's Toys

EPROM Eraser up to 4x40-pin	$39
Stand Alone Speach Board	
DRAM 256/1M up to 4M	$39
SRAM 64/256k up to 1M	$39
Adaptec 4070 RLL-SCSI	$85
MAC 101 Keyboard	$45
MAC 101 ADB Keyboard	$55
IBM 101 Keyboard (used)	$16

Pre-Release Books

Video Game Quest by DMS	$14
The Easy Way to Everyday DOS	$12

AT 286 / 386 Systems and Parts
Call for Configurations
Great Service and Prices

Mouse 2-Button Serial	$38
Dr Halo III w/mouse purchase	$5
ADDS ViewPoint Terminal	$45
TI 820 Printer KSR 132 Col	$205

ATARI ST HARD DRIVES

20MB Kit	$225
40MB Kit	$295

MasterCard VISA

(818) 882-7980
21016 Devonshire, Chatsworth

The down side of this, of course, is for people who don't want to be contacted by MarketPlace users. Lotus does not own the data in the lists (they licensed it from other vendors) and have said that they refuse to be responsible for correcting errors or taking people off of the lists when they ask. Although having more specific information on people will allow businesses to target their advertising better and therefore bother fewer people, it also means that many companies that have never used direct mail or phone soliciting can now start.

If MarketPlace causes an increase in junk mail, the world will lose more forests. One can only hope that it is primarily used to help retarget companies' mailing strategies or to switch away from paper-based ads towards electronic communication.

UNIX TALKS BREAK DOWN

The Open Software Foundation and UNIX International broke off merger talks aimed at uniting the two warring factions of UNIX manufacturers. The two groups accused each other of being intransigent on basic issues such as methods for inter-process communication and multiprocessing.

Users had hoped that the two groups could come to an agreement so that there would only be one major variant of UNIX in the future. With the discussions halted, it is unlikely that any agreement could come in the next few years, meaning that the two groups will probably release the first versions of their UNIXes late this year or early next year. With those versions out, it will be even more difficult for the two groups to agree on anything, since their users will become that much more entrenched.

NOVELL AND LOTUS TO MERGE; MANY SHAREHOLDERS UNHAPPY

Novell and Lotus announced that they will merge their companies into a single unit, solidifying their respective strongholds on the market.

The initial announcement indicated that the two companies had equal values of about $1.4 billion each. The preliminary agreement was for Lotus to buy Novell stock from shareholders by trading 1.19 shares of Lotus stock for each share of Novell stock. Novell would become a subsidiary of Lotus, but the two boards of directors would merge into one, essentially making the companies equal.

Shareholders from both companies com-

UQM - LAN SPECIALISTS

NOVELL GOLD RESELLER

CERTIFIED NetWare ENGINEER

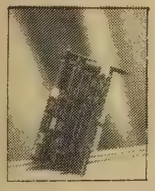
LANDA SM MEMBER

NOVELL CERTIFIED ENGINEER ON BOARD TO SERVE YOU BETTER

ARCNET

- 8 Bit
- Coaxial
- Star/bus

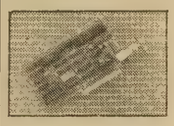
- 8 Bit
- Coaxial + Twisted Pair



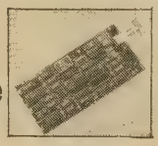
- 16 Bit
- Coaxial
- Star/bus

- 8 Port
- Active Hub
- Coaxial + Twisted Pair

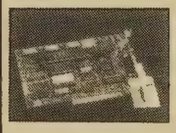
ETHERNET



- 8 Bit
- NE-1000
- Compatible



- 16 Bit
- NE-2000
- Compatible



- 8 bit
- WD Ethernet

- 16 Bit
- Ethernet
- IEEE 802.3
- On Board DMA
- Certified Driver
- For Netware

EDIMAX PROFESSIONAL LAN PRODUCTS

★ 100% IBM Compatible
★ Novell Netware Compatible
★ One-To-One Exchange Warranty For One Year

MAY SPECIAL
1200 BAUD TRANS MODEM EXTERNAL **$35**

WHOLESALE NETWORK PRODUCT, DEALERS WELCOME

Your Network Solutions: **Fileservers & Workstations Available** - All Parts to be Novell Compatible

CALL FOR PRICING

386 SYSTEMS

- 1 MB RAM (exp. to 8 MB)
- 200 W UL Power Supply
- 5-Drive AT Deluxe Case
- Floppy/Hard Disk Controller
- 1.2MB Floppy Drive
- Mono/Graphic Card
- 2 Serial/Parallel/Game
- 12″ Amber Monitor
- 101 Keys Keyboard w/cover

16 MHz 80386-SX **$895**
20 MHz, 0 Wait **$1185**
25 MHz, 0 Wait **1290**
25 MHz, 64K Cache **1650**
33 MHz, 64K Cache **2095**

286 SYSTEMS

- **1 MB RAM** (exp. to 4/8 MB)
- 200 W Power Supply
- 5-Drive Case or Mini Tower
- Floppy/Hard Disk Controller
- 1.2 MB Floppy Drive
- Mono/Graphic Card
- Serial/Parallel/Game
- 12″ Amber Monitor
- 101 Keys Keyboard w/Cover

12 MHz, 0 Wait **$695**
16 MHz, NEAT **795**
20 MHz, NEAT **875**

XT TURBO SYSTEM

- 512K RAM (exp. to 1 MB)
- 4.77/10 MHz Turbo
- 30 MB Hard Disk
- Floppy/Hard Disk CTRL
- 360K Floppy Disk Drive
- Serial/Parallel/Game
- 12″ Amber Monitor
- Mono/Graphic Card
- 101 Keys Keyboard
- Deluxe Turbo Case

SPECIAL **$695**

16 MHz Laptop Computer

- 16 MHz 80286 CPU
- High-Res Gas Plasma Screen
- 1 MB RAM (exp. to 8 MB)
- LIM EMS 4.0
- Built-in Serial/Parallel
- 2 Expansion slots for add-ons
- 1.44 MB 3.5″ Floppy Drive
- 3.5″ 40 MB Hard Disk
- Numeric Function Keypad
- MS-DOS 4.0 w/GW BASIC
- Carrying Case Included

$2375

Please call for
NOVELL 386/286
Advanced Netware, X.25
Bridge, 3270/5250
Gateway, & XQL Products

Want to make your company more efficient and more profitable?
Let us share our expertise with you in LAN, customized accounting, Accountmake
- Free estimation
- Consulting
- On-site installation and training

UQM COMPUTER

22395 S. Western Ave., Suite 304 Torrance, CA 90501
(213) 782-1422 FAX: (213) 782-1533 Hours: Mon-Fri. 9:30-6:30 Sat 11:00-3:00

VISA · master charge

- Add 3% bank charge for VISA & MasterCharge
- Prices subject to change without notice.
- AT & XT are trademarks of IBM

Company Leasing Plans Available

SPECIAL COMPUTER SALES

CALL NOW for Your Computer Needs And Be One Of The Thousand Satisfied Clients Of ELECTRONIC BUSINESS COMPUTERS!

THE LOWEST PRICES THIS SIDE OF TOWN!

EBC 386 SYSTEM

- 386 MB 26MHz Landmark Test
- 8 Expansion Slots (1-32Bit, 5-16Bit, 2-8Bit)
- 1024 RAM Memory Expandable To 8 Meg
- 2X Hard & Floppy Disk Cont.
- 1.2 & 1.4 H. Density Floppy Dr.
- Super VGA Monitor 1024 x 768
- Super VGA Card 16 Bit W/512K
- 40 Meg Hard Disk 28MS
- I/O Card Serial/Printer/Game
- 101 Enhanced Keyboard
- Mini Tower Case

ONLY **$1899**

386SX SYSTEM

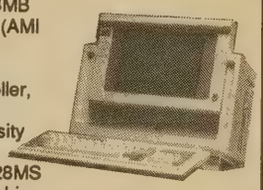
- 386SX Motherboard
- 1024K 1 Meg RAM Memory
- 2X Hard Disk & 2X Floppy Controller
- 1.2 & 1.4 MB Floppy Drive
- 40 Meg Hard Drive
- AT I/O 2 Serial/Printer/Game
- 101 Enhanced Keyboard
- 200 Watt Power Supply
- VGA Card 16 Bit W/512K
- VGA Monitor 1024 x 768
- Mini Case W/MHz Display

ONLY **$1695**

ONE YEAR WARRANTY ON PARTS & LABOR!

EBC 386 16-20MHz GAS PLASMA PORTABLE

- 32 Bit Motherboard
- 1MB RAM Exp. To 8MB
- 386 Microprocessor (AMI Bios)
- 2X Hard Drive & 2X Floppy Drive Controller, 1:1 Interleave
- 1.2 & 1.4MB H. Density Floppy Dr.
- 60 Meg Hard Drive 28MS
- 640 x 400 Pixel Graphics
- 80 x 25 Character Display
- RS-232 Serial Parallel Printer External RGB/Mono Port



ONLY **$2299**

EBC 286 TURBO SYSTEM

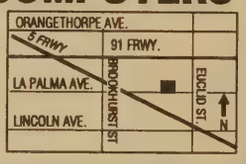
- 80286 12MHz I/O Wait State
- 40MB Hard Drive (28MS)
- 1MB Expandable To 4MB
- 1.2 High Density Floppy Drive
- 16 Bit Controller Card, 1:1 Interleave
- I/O Card 2 Serial/Printer/Game
- 101 Enhanced Keyboard
- Mini Case W/MHz Display 200 Watt Power Supply
- VGA Card 16 Bit
- VGA Color Monitor

ONLY **$1259**

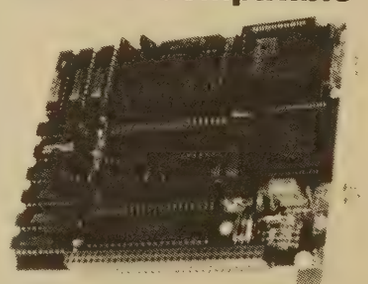
EBC ELECTRONIC BUSINESS COMPUTERS

TEL: (714) 778-1795
FAX: (714) 778-1891
1775 West La Palma Ave. Anaheim, CA 92801

VISA MasterCard



Accelerate Your PC-XT Compatible



Dealer Inquiries Welcome

Only **$349**

GO FAST!

NEW! 12-MHz VT286 CARD
No Risk 30-Day Money Back Guarantee

▼ 80286 Microprocessor ▼ 12-MHz Clock Speed ▼ 8K-Byte 0 Wait-State High-Speed Cache RAM ▼ Supports 80287 Math Coprocessor Running 8 or 12-MHz ▼ Fits Short Slot ▼ Norton SI Rating: 8.2-11.2 ▼ Supports Novell Workstations ▼ Supports AutoCAD ▼ Made In The USA.

"All the commands in dBASE III Plus were 5 to 8-times faster after the card was added."
—Larry Buss, Vista School District

"By adding the VT286, I did not need to tie-up an AT. Truly an amazing board."
—Rick Steward, Personal Software

Call For Corporate Quantity Discounts

CALL NOW
(619) 744-2313

VeriTek
1205 Linda Vista Dr.
San Marcos, CA 92069

plained loudly that the deal was unfair and structured against them. The companies are worried that the deal could be voted down, although both companies have large numbers of institutional investors who could help push it through. The vote is expected in July.

In the weeks before the merger announcement, Novell began selling off its less profitable hardware units in a move to strengthen itself as a software company. It sold the Macintosh hardware technology it acquired when it bought Kinetics to many vendors, including Farallon and Shiva. It is expected that

In the weeks before the merger announcement, Novell began selling off its less profitable hardware units in a move to strengthen itself as a software company.

it will sell other hardware subsidiaries, or at least their technology rights, in the coming months.

Lotus also recently relieved itself of its few hardware units so that it could concentrate on software and software delivery systems.

The two companies emphasized that the merger would save money on marketing, since their customer bases overlap in many areas. The combined marketing power would extend to dealer services, an area in which Lotus has a much better reputation.

With both companies stressing software, they would also be able to attract more consultants to support their products.

Farallon Starts Licensing PhoneNet Patent

The US Patent Office issued Farallon, Inc. a patent for the main method used by the PhoneNet connector for passing LocalTalk data over twisted-pair telephone wire.

Dozens of small manufacturers have created cheap clones of the PhoneNet connector, and Farallon has sent letters to most of them asking them to consider licensing the

continued on page 98

CADD PUBLISHING

INTEGRATED COMPUTER SYSTEMS

WHY ICS ?

VALUE !

ICS TURNKEY SYSTEMS

INCLUDES :	VALUED
FREE DELIVERY AND INSTALLATION.	~~$ 100.~~
FREE 30 DAYS ON-SITE SERVICE.	~~$ 175.~~
FREE 30 DAYS PLOTTING OR PRINTING SERVICE.	~~$ 900.~~
FREE ICS SYSTEMS STARTER KIT	~~$ 100.~~
KNOWLEDGEABLE TECHNICAL SUPPORT, ALWAYS FREE	

NOW, COMPARE THE REAL VALUE !!

AUTOCAD®

VERSACAD®

CalComp®

Nth ENGINE®

AUTOCAD	VERSACAD	CALCOMP	Nth ENGINE
386	386	3103	1024
$ 2,650.	$ 2,500.	$ 2,600.	$ 2,790.

PLOTTERS

ENCAD SP2800 A-E	3,990.
ENCAD SP600 A-B	650.
IO LINE LP3500 A-D	2,590.
HI DMP62 A-E	3,950.
MUTOH F-910	7,990.
MUTOH IP-500A	3,990.
ROLAND GRX 300. A-D	3,590.
ROLAND GRX 400. A-E	4,590.

DISPLAY

VIDEO 7 VRAM W/ 512K	440.
CALCOMP 3101	1,390.
VMI COBRA-PLUS 3A1	995.
PIXELWORK UA1024	1,290.
RENDITION II/16	1,190.
MITSUBISHI DS 19"	2,390.
HITACHI SS 20"	2,290.
NANAO 9070 16"	1,190.

ACCESSORIES

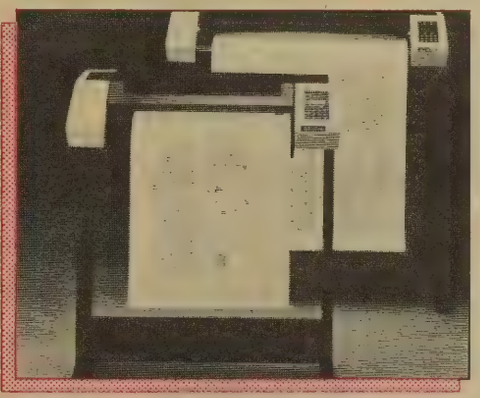
SUMMA.II DIGITIZER 12X12	350.
KURTA I/S ONE 12 X 12	385.
INTEL 80387-25	500.
INTEL 80387-33	585.
CANON LBP-4 LASER	995.
QUME POSTSCRIPT	2,990.

SYSTEM OF THE MONTH

ICS - VGA 386 SYSTEM

- ICS 386-SX. INTEL 16MHz CPU
- 1 MEG RAM ONBOARD
- 40M FAST ACCESS HARD DRIVE
- TEAC 1.2 MB FLOPPY DRIVE
- 14" VGA COLOR MONITOR
- PARADISE CHIPSET VGA CARD
- 2 SERIAL/1 PARALLEL AT I/O
- KEYTRONIC 101 KEY KEYBOARD

COMPLETE SYSTEM $ 1,850



MICRONICS 386-33

- MICRONICS 33MHz W/ 32K CACHE
- INTEL 80386-33MHz CPU
- 1 MEG 80ns RAM (EXP. TO 16MB)
- 66M HARD DRIVE
- TEAC 1.2 MB FLOPPY DRIVE
- 2 SERIAL/1 PARALLEL AT I/O
- 12" MONOCHROME MONITOR
- MONOCHROME GRAPHICS CARD
- KEYTRONIC 101 KEY KEYBOARD

COMPLETE $ 3,190

I C S 386-25 MHz

- ICS 386-25 MHz WITH 64K CACHE
- INTEL 80386-25MHz CPU
- 1 MEG 80ns RAM ONBOARD
- 66MB HARD DRIVE
- TEAC 1.2 MB FLOPPY DRIVE
- 2 SERIAL/1 PARALLEL AT I/O
- 12" MONOCHROME MONITOR
- MONOCHROME GRAPHICS CARD
- KEYTRONIC 101 KEY KEYBOARD

COMPLETE $ 2,190

I C S 386-20 MHz

- ICS 386-20 MHz
- INTEL 80386-20MHz CPU
- 1 MEG 80ns RAM ONBOARD
- 66MB HARD DRIVE
- TEAC 1.2 MB FLOPPY DRIVE
- 2 SERIAL/1 PARALLEL AT I/O
- 12" MONOCHROME MONITOR
- MONOCHROME GRAPHICS CARD
- KEYTRONIC 101 KEY KEYBOARD

COMPLETE $ 1,890

I C S 286-12 MHz

- ICS 286-12 MHz WITH EMS LIM 4.0
- INTEL 80286-12MHz CPU
- 1 MEG 100ns RAM ONBOARD
- 40MB HARD DRIVE
- TEAC 1.2 MB FLOPPY DRIVE
- 2 SERIAL/1 PARALLEL AT I/O
- 12" MONOCHROME MONITOR
- MONOCHROME GRAPHICS CARD
- KEYTRONIC 101 KEY KEYBOARD

COMPLETE $ 1,290

SPECIALIST

ICS - 1813 REDONDO AVENUE. LONG BEACH. 213 - 494 - 1230

FROM OUR READERS

FROM THE DATABASE TRENCHES: IT'S A JUNGLE OUT THERE

On reading your interview with Roger Sippl and Phillip White of Informix, I have to say that Roger Sippl's view of Informix as a practical, pragmatic product is stretching things.

I just finished evaluating Informix, Oracle, Ingres and Sybase for the company where I work, as we are getting ready to convert our computer operations to relational database technology. My conclusion was that all four of the systems have major weaknesses, and Informix is especially weak.

When talking about database systems for mainframes, minis, and PCs, I think it's important to remember what they're needed for, and how much a company risks by standardizing on one. The need for converting to a DBMS is to pull together a company's data and programs into one format to eliminate the islands of automation that today's company consists of. Also, you want to empower your programmers and users with easy-to-use and powerful system development tools, to get out of the "we can't write you that program for another eight months" syndrome.

"We frankly could care less about multimedia and hypertext and snazzy new spreadsheets. We need all the help we can get prying a '70s and '80s technology set of systems into the '90s."

The risks are financial. We see the initial cost of obtaining a DBMS for our VAX-and-PCs environment as being about *1.2 million dollars.* That just gets us in the door (the DBMS software and disk systems for the VAX). That doesn't cover the costs of applications conversion, or buying off-the-shelf applications software. Heaven forbid that the DBMS company goes out of business or stops supporting the product line.

We frankly could care less about multimedia and hypertext and snazzy new spreadsheets. We need all the help we can get prying a '70s and '80s technology set of systems into the '90s. In particular, we have a lot of RMS files and COBOL and BASIC programs on our VAX, and dBASE/Clipper programs and files on the PCs.

What our company, and many companies, will need from a database management vendor is the following:

•The ability to run the same in-house program system—programs, screens, report formats and graphics—on all platforms, essentially unmodified. This includes DOS, UNIX, and VAX-VMS in our case.

•A fourth-generation language (4GL) to write the programs in, which may invoke screens, graphs, reports and other programs. SQL alone is not enough—local variables, character manipulation, and constructs like DO-WHILE are also required.

•The ability to read from and write to existing dBASE and VAX RMS files. It is not sufficient in a corporate environment to only be able to convert dBASE and RMS files to the new DBMS format. Rewriting software is slow and costly, and a new DBMS needs to be able to coexist with older systems.

•Pre-compilation of 4GL programs to C, from which they would be compiled to object code. This makes it possible to run programs efficiently, and to be able to run the programs on some machines that don't have the DBMS in place. This is similar to what Clipper gives us now with our dBASE program.

•Access to the database from spreadsheet programs (Lotus in our case).

•Sufficient variety and depth of off-the-shelf applications systems for the minis/mainframes that are written to work with the DBMS.

The product offerings from the four companies fall flat in one or more areas. Informix has a good 4GL for all platforms, but it doesn't compile to object code, can't use dBASE files dynamically, and has a limited selection of third party mini/mainframe software. Oracle lacks a 4GL (they claim to be working on this) and you're expected to embed your programs in your screens, not the other way around. Ingres has good 4GL end-user tools, but put it on a DOS PC and it's huge, and missing several pieces; on the PC the programs don't compile and require Ingres to be present. Sybase doesn't run in DOS at all on a standalone PC, and like Informix lacks the wide selection of third party large-system applications.

I don't mean to quibble or to demean the major step forward that these four Bay Area companies are taking into the future of computing. My intention is to point out that we in the D.P. management trenches are being offered only partial solutions (at substantial risk) to major system integration problems. We need better tools, and we need them today. Far from a time for self-congratulation, this is a time for companies like Informix to come down from hype(r)-space, roll up their sleeves, and get down to business.

Mitch Gordon
San Francisco

TWO VIEWS OF OS/2

My first encounter with the idea of an operating system for a computer came when Radio Shack announced OS/9 for the Color computer six or seven years ago. By the time I bought my first IBM clone, about four years ago, it was already apparent that DOS was the only way to go.

My move into the Windows environment was gradual and easy. On my XT I thought it was fun. Then when I moved to a 286 machine and began using Windows 286, it began to show real promise. Now on my 386, Windows 386 only enhances that promise. It's a real whiz-bang environment with limitations that should not be there. And it crashes for no apparent reason a little too often.

We keep reading about the problems of

ORANGE COUNTY'S LOW PRICE LEADER!

XT TURBO

100% IBM Compatible
AT Style Case (2 Button, 3 LED, Key)
10 MHz Motherboard w/256K RAM
1 360K Floppy (Beige Color)
150 Watt Power Supply
84 Key Keyboard (AT Style)
Video Card w/Printer Port
8 Expansion Slots
1 Year Warranty (Parts and Labor)

Mono System	$400
CGA Color System	$550
VGA Color System (640x480 STD)	$750
640K RAM Upgrade	$50

386 (20 MHz) SYSTEM

100% IBM Compatible
AT Jr. Case (2 Button, 3 LED)
20 MHz System w/1 MB RAM
1-1.2 MB Floppy Drive
Hard & Floppy Controller Card
101 Key Keyboard
Clock/Calendar
200 Watt Power Supply
1 Year Warranty (Parts and Labor)

Mono System	$1200
VGA Color System (640x480 STD)	$1550
VGA Color System (1024x768 SVGA)	$1650
2MB RAM Expansion	$150
25MHz Upgrade	$125

286 AT TURBO

100% IBM Compatible
AT Jr. Case (2 Button, 3 LED)
AT System Board w/512K RAM Exp to 1MB
1.2 MB Floppy Drive
200 Watt Power Supply
84 Key Keyboard (AT Style)
Video Card w/Printer Port
Hard & Floppy Controller Card
1 Year Warranty (Parts and Labor)

Mono System	$675
VGA Color System (640x480 STD)	$1025
VGA Color System (1024x768 SVGA)	$1125
1MB RAM Expansion	$65
2MB RAM Expansion	$125

386 SX

$925

IBM Compatible
AT Jr. Case (2 Buttons 3 LED's)
16 MHz 386 MB w/512K RAM EXP to 4 MB
1-1.2 MB Floppy Drive
Hard & Floppy Controller Card
101 Key Keyboard
Clock/Calendar
200 Watt Power Supply
Mono Monitor w/Card

SPECIALS!

Fax Board $195

40/60/120 MB
Tape Back-Up w/Software
Only **$320**

PRINT RIBBONS • COMPUTER PAPER
• COMPUTER CHECKS • BUSINESS FORMS
• LASER PRODUCTS • LABELS • DATA CARTRIDGES

Factory Direct Prices. . .

Computer Supplies Unlimited

Serving You Since 1983

(714) 841-3393

17931 Beach Blvd., Ste. 110
Huntington Beach, CA 92647
Near NW Corner Beach & Talbert
Look for our sign: COMPUTERS

MON-FRI 9AM-5:30PM
SAT 9-2

master charge | VISA

Prices reflect 3% cash discount.

Prices and availability subject to change without notice.

ATTENTION:

END USERS

We will meet or beat any price on any computer system in this magazine.

moving people to buy and use OS/2. Microsoft and IBM seem at a loss as to why this move is so slow, perhaps even dead. To us users, the reasons are obvious. I have several thousand dollars invested in DOS and Windows programs.

I don't care so much about the DOS programs. On my first XT, WordStar 2000+ was a wonder. Now I don't even plan to purchase the most recent upgrade of WordStar 2000+ because AMI, which runs under Windows, will import all those old files and doesn't suffer the limitations of a text-based word processing program. This move from WordStar 2000+ to AMI was gradual and easy. I didn't have to give up the one to have the other. WordStar 2000+ still rests on my hard drive, just in case.

DOS killed CP/M. And perhaps eventually OS/2 will kill DOS. Yet we must consider the matter of numbers. CP/M had a fairly large installed base, but DOS users far outnumber those of CP/M. You can shove a pussycat across the room, yet a lion must be enticed.

Microsoft and IBM might learn a lesson from us users who were enticed by Windows and the wonderful programs, like Aldus PageMaker, that run under this environment. A Windows compatibility box for OS/2 would give me an incentive to buy OS/2. Why should I buy PageMaker for OS/2 when the Windows version works so well? The OS/2 version cannot even print on my HP LaserJet. I have neither the money nor the space for two computers.

I wrote to Microsoft asking about OS/2. After over two months, I received a reply which stated that OS/2 is not a retail product. It is only available with systems from companies like Compaq. How can they expect us to move to OS/2 if we cannot even buy it?

Ron B. Combs
San Jose

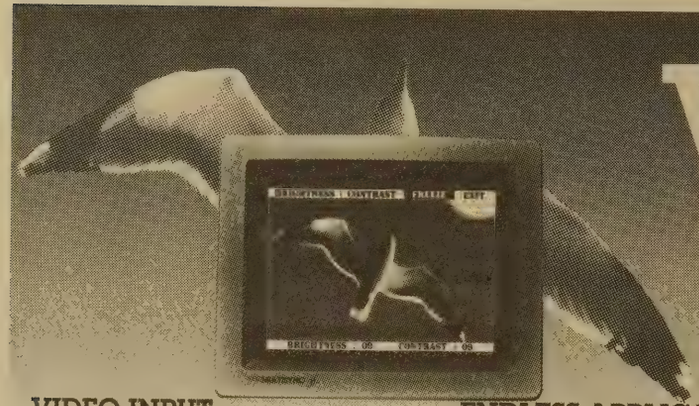
With regard to Paul Hoffman's article "OS/2 and Microsoft Windows: Manufacturers Discover That Forced Reality Doesn't Work" (January), I would urge Mr. Hoffman to take a closer look at reality. Neither OS/2 nor Windows are as unpopular as Mr. Hoffman suggests.

There is a widespread misconception that OS/2 is just a bigger, faster, more expensive version of Windows. Although many Windows applications will migrate to OS/2 and become more powerful in the process, OS/2 is primarily a platform for enterprise-wide, as opposed to single-user, computing, but without sacrificing the paradigm and benefits of the single-user graphical interface. Viewed in this role, OS/2 is already a very popular operating system indeed. Everything from major airline terminal control and reservation systems to bank automation and autoteller systems is being implemented under OS/2 today. OS/2 is a better vehicle for stealing mainframe thunder than UNIX.

Windows, on the other hand, is simply the best unifying environment for single-user applications. I have first-hand knowledge of the forthcoming Windows 3.0, and not even DESQview can hold a match to its multitasking capabilities for non-Windows programs, not to mention the superior ease-of-use and integration of Windows applications. This is an environment one can work in all day without ever returning to DOS. Future releases aside, it is becoming increasingly difficult to find a corporate setting where Windows is not in use—hardly the definition of "unpopular."

I find it amusing that so many of Mr. Hoffman's friends primarily use the OS/2 "compatibility box" and noteworthy that so many run XENIXs. Perhaps his views on operating environments are the product of his environment.

John Willis
Monrovia

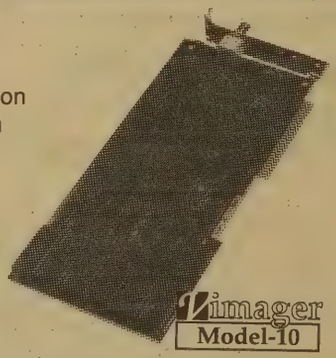


VIMAGER
MAKES YOUR CREATIVITY FLY HIGH !
A Complete Video Imaging Solution for Your VGA Publishing & Presentation Environment

VIDEO INPUT
- Video Camera
- Camcorder
- Broadcast Television
- Video Cassette Recorder
- Electronic Still Photography Camera

AVAILIABLE AT:
- Blue Parrot International 805-947-5552
- Desk Top Publishing Corner 808-764-3414
- PAL Computer Service 714-881-2614

ENDLESS APPLICATIONS
- Animation
- Desktop Publishing
- Education
- Graphics Presentation
- Industrial Inspection
- Insurance
- Merchandising
- Newsletters
- Portraits
- Real Estate
- Security
- Sports



REAL TIME IMAGE CAPTURE
- 1/60 Second Per Field
- 1/30 Second Per Frame
- Software Programmable Image Brightness and Contrast

IMAGE EDITING SOFTWARE
- Grab The Image
- Crop The Image
- Store Images in Various File Formats For Desktop Publishing & Graphics Presentation Programs
- Extensive Image Enhancement Programs

See us at COMDEX/Spring '90
June 3 - 6, 1990
Atlanta, Georgia
Booth # 2412

AITech
1574 Centre Pointe Drive
Milpitas, California 95035

408/946-3291 ▪ 800/882-8184 ▪ 408/946-6901 (FAX)

DEALER AND DISTRIBUTOR INQUIRIES WELCOME

T3100SX
- Toshiba's most powerful battery-operated 386
- Feature VGA gas plasma screen which allows simultaneous display

T1000SE
- Toshiba's smallest and lightest battery-operated PC notebook
- Weight only 5.9 pounds

PORTABLE PERSONAL COMPUTER

TOSHIBA

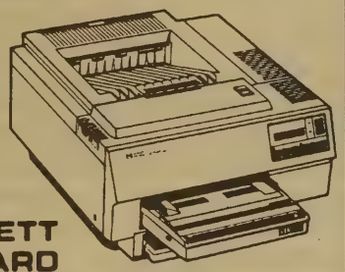
T1600/20 & T1600/40
- Desktop capabilities in a go-anywhere computer
- Exceptionally compact and light - just 11.6 pounds
- Runs on a internal, removable, rechargable battery pack
- Detachable backlit supertwist EGA LCD display

$150 CASH REBATE ON HP DESKJET PLUS PRINTER. Ask for details

DeskJet Plus
$485 (After mail-in rebate)

LaserJet IIP
with toner
$$CALL

LaserJet III
with toner
$$CALL



HEWLETT PACKARD
Authorized Dealer

ONE STOP SHOPPING

HARDWARE
SOFTWARE
BOOKS
SUPPLIES

ONE STOP SHOPPING

CITIZEN

120D
- 9-pin, 120 CPS

$$$135

180D
- 9-pin, 180 CPS

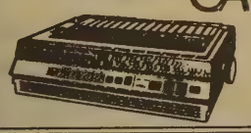
$$$150

GSX-140
- 24-pin, 192 CPS

$$$315

* Color kit for GSX-140 **$65.00**

Panasonic Office Automation



KX-P1124
- 192 CPS (draft), 63 CPS (LQ)
- 24-pin, 80 column

$$$295

KX-P1180
- 192 CPS (draft) 38 CPS (NLQ)
- 9-pin, 80 column

$$$179

HYUNDAI
Super-LT3 Laptop
- 80C286 8/10MHz
- 1MB RAM, 20MB HDD
- 1.44M FDD

$1,795

NEC

MultiSync 2A monitor ... $469

MultiSync 3D monitor ... $625

PowerMate 386 SX Plus
- 16MHz, 2MB RAM, 1.2M FDD
- HDD/FDD controller
- VGA on board
- NEC 40MB hard drive
- Mouse port on front panel
- Microsoft Window 386
- Microsoft DOS w/ GW Basic

$2175

PowerMate 286 Plus
- 12MHz, 1MB RAM, 1.2M FDD
- HDD/FDD controller
- VGA on board
- NEC 40MB hard drive
- Mouse port on front panel
- Microsoft DOS 3.3 w/ GW Basic

$1750

EPSON
Equity LT
Laptop Computer
- 2FDD, 640K

$$$965
- 20MB hard drive, 640K

$$$1,695

---

386 25MHz SYSTEM

80386 25MHz CPU, 1MB RAM, 1.2M FLOPPY DRIVE
HDD/FDD CONTROLLER, 200 WATT POWER SUPPLY
MINI TOWER CASE, 101-KEY ENHANCED KEYBOARD
40MB (28ms) HARD DRIVE,
1 PARALLEL 2 SERIAL & GAME PORTS

$1695

286 12MHz SYSTEM

80286 12MHz CPU, 640K RAM, 1.2M FLOPPY DRIVE
HDD/FDD CONTROLLER, 200 WATT POWER SUPPLY
AT STYLE CASE, 101-KEY ENHANCED KEYBOARD
40MB (28ms) HARD DRIVE,
1 PARALLEL 2 SERIAL & GAME PORTS

$995

386 CACHE 33MHz

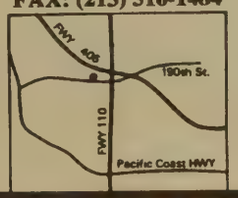
80386 33MHz CPU, 32K CACHE,
INTEL 82385 33 MHz CACHE CONTROLLER
FANCY PANEL TOWER CASE

$1795

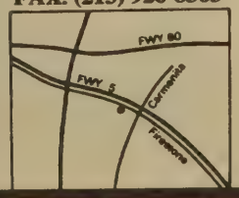
IPC WAREHOUSE

Service & System Upgrade Available !!!

Show Room 20,000 sq. ft.
1355 W. 190th St.
Gardena, CA 90248
TEL: (213) 516-2098
FAX: (213) 516-1484



Show Room 5,200 sq. ft.
13340 E. Firestone Blvd., #E
Santa Fe Springs, CA 90670
TEL: (213) 926-7363
FAX: (213) 926-8363



DISGRUNTLED FORMER AMIGA USER STRIKES BACK

This letter is in response to Mr. David Rohrl's "Even More Offended Amiga Users" letter which appeared recently in the Letters column.

Frankly, I am tired of Amiga users whining like little children any time somebody says something about the Amiga that is not complimentary, or doesn't go out of his or her way to mention the Amiga in an article. These are the facts, Mr. Rohrl:

1. The PC and the Macintosh are the two most popular consumer computer platforms.

2. The PC and the Macintosh are the two most popular business computer platforms.

3. There is much more MS-DOS and Macintosh software than Amiga software.

4. There are dizzyingly more peripheral options for the PC and Macintosh than for the Amiga.

Just for the record, I had an Amiga 1000 for almost two years and I finally sold it in frustration. The only person I could find to buy it was somebody who wanted to take it apart and experiment with the components. The user interface was abominable compared to the Macintosh, the machine kept crashing all the time (v. 1.3 OS), high-resolution mode was unusable because of flicker, and it was as slow as molasses with a hard disk compared to the PC and Macintosh.

Whenever I brought up these points with my Amiga dealer, he would simply give me excuses ("It's a brand new machine," "Commodore is working on it," "Wear polarized sunglasses to take away the flicker," etc.) and would then recite the Amiga's cost advantages. Well, Mr. Rohrl, I'm afraid cost advantages alone are not going to sell an ill-supported and faulty non-standard computer. At least when the Amiga first came out it had technology on its side, but now it's a technological dinosaur compared to 25 MHz PCs and Macintoshes.

How many businesses and consumers do you think will buy a computer they have to wear sunglasses in order to use? We are all a little smarter than that. After battling with these intolerable defects, I decided to get the real thing and purchased a Macintosh IIci.

The Macintosh and PC have excellent networking support, outstanding business and productivity applications, can communicate with one another, offer outstanding peripherals and output devices, and together provide a business with its total computing solution.

On the educational front, only an exceptionally brave student would purchase an Amiga—Apple has an excellent educational purchase program with which a Macintosh IIci could be purchased for a very competitive price. At my university (UC Berkeley) I have not seen a single Amiga in use. If I want to print out my Macintosh document, all I have to do is go to my computer lab, or just stop at any of several dozen copy/graphics houses around campus. How many universities and copy/graphics houses do you see using the Amiga, Mr. Rohrl?

And about some things you said in your letter:

•"Quite frankly, Amigas are at least as widely used for video production as for pure 'game machines.'" Is this good?

•"Well over a million people have decided that the world of MS-DOS and Macintosh computing have failed to meet their needs, and have purchased Amigas instead." Mr. Rohrl, "well over" *three million* Macintosh systems are in use, as well as a countless number of PCs and clones. The Amiga's numbers are a drop in the bucket, and that fact speaks for itself.

It is my opinion that a publication is obligated to evaluate its audience's needs and then cater the majority of the publication to

This is as low as fax gets: $195

$195 9600-bps fax board for your PC! Wow!

You want to get faxing, right? Well, you've come to the right ad. If you've got a PC with an empty half slot, you'll want to pick up the phone right now and get your order in for the new **Frecom FAX96**. It's only $195 plus tax and shipping, but supplies are limited and you'll want to act fast.

The Frecom FAX96 gives you high speed 9600 bps performance and is fully compatible with all standalone Group III fax machines. It's new, and cuts no corners. It will even receive faxes without interrupting you while you're working on your PC. Of course, at that price you don't get a voice answering machine or built-in modem or gloriously complicated menus.

What you do get is a way to send a fax whenever you need to get a message out in a hurry and don't want to go stand in line at the nearest fax machine. With your own FAX96 board, you have total control. And you get to see incoming faxes on your monitor before you print (or junk) them.

The Frecom FAX96 has automatic redial, in case the fax you're calling is busy. Your $195 purchase also includes very simple "push-the-button" software that lives up to Fremont Communications' **instant ON** philosophy. Installation is a snap; our installation software guides you through the few simple setup choices without the befuddlements of communications jargon. So to start faxing from your PC, just call, have your VISA or MasterCard ready, and we'll ship you a Frecom FAX96 complete with a 100% money-back guarantee. For $195! That's as low as fax gets.

Order phone: **415-438-5000**
Dealer inquiries 415-438-5016
FAX: 415-490-2315

FRECOM

Fremont Communications Company
46309 Warm Springs Blvd,
Fremont, CA 94539

"A little board. A lot of technology. And a low price direct to you. Money-back guarantee. Give it a shot!"

Paul Masters, UC Berkeley MBA and Northern Telcom alum, is President of Fremont Communications

Super Discount Computer Store

FREE

GIFT CERTIFICATE — Two Days, One Night in LAS VEGAS!!!

Total Value of $90 with Purchase of over $2000

286-12 MHz

- w/40MB HD
- 5 1/4" & 3 1/2" Floppy
- Super VGA Card & Monitor
- One MB Ram
- One Year Warranty
- Formatted & Tested

$1499

386 SX

- w/40 MB HD
- 5 1/4" & 3 1/2" Floppy
- Super VGA Card & Monitor
- One MB Ram
- One Year Warranty
- Formatted & Tested

$1799

HEWLETT PACKARD

HEWLETT PACKARD
Laser Jet IIP w/Toner & Cable
Limited Stock **$949**

NEW
HEWLETT PACKARD
LASER JET III
Limited Stock
$1539

HEWLETT PACKARD
DESK JET + $649
DESK WRITER 795

HEWLETT PACKARD
ScanJet + w/Int.
$1399

HEWLETT PACKARD Accessories

25 Fonts in One	$275
Plotter In A Cartridge	229
Pacific Page (Post Script) for II/IIP	449/359
Headlines Font	229

RAM UPGRADES

1 Meg Upgrade For Laser Jet III	$279
2 Meg Upgrade For Laser Jet III	359
4 Meg Upgrade For Laser Jet III	599
1 Meg Upgrade For Laser Jet IIP	275
2 Meg Upgrade For Laser Jet IIP	359

TOSHIBA LAPTOPS

T-1000SE
1MB RAM, 1.44
$1055

T-3100SX
VGA/BATT
$3599

T-1200 HB
20MB HD
$1850

T-1200 FB
$1379

T-1600
286-12, EGA
40MB
$2999

T-5100
40MB
$3499

T-5200
40MB
$4569

MITSUBISHI LAPTOP

Laptop
286-12 20 MB
$1695

Laptop
286-12 40 MB
$2245

EPSON Printers

LX-810	$189	LQ-850	$499
FX-850	339	LQ-1050	650
FX-1050	429	LQ-1010	449
LQ-510	320	LQ-2550	899

VGA Monitors

SONY

VGA 1320	$479
1304 HG	639
1302	595
GYM 2000, 20" Multiscan	$1499

NEC

2A	$469
3D	575
4D 16"	1159
5D 20"	2250
LASER	3199

brother

We're at your side.

HL8E LASER
1MB RAM, 20 FNTS
$1699
Postscript $3K

Modem
2400 B Modem
$99

Pacifico Computer Center

(213) 478-2522

OPEN 10-6 MON. THRU SAT

11540 Santa Monica Blvd., West Los Angeles, CA 90025

Prices Subject to change without notice.

that target audience. The Amiga audience constitutes a fraction of the MS-DOS and Macintosh audience. Amiga users simply fail to realize that their machines are not a force in the industry. They think crying about it will make the Amiga sound more popular than it really is. If anything needs to be done, Commodore needs to do it, and given Commodore's history, I seriously doubt it.

"How many businesses and consumers do you think will buy a computer they have to wear sunglasses in order to use?"

If any Amiga user reads this as "Amiga bashing," he is very much mistaken. His attitude would be typical of Amiga users who don't accept the truth and feel insulted as a result, like Mr. Rohrl. I am simply pointing out the cold hard facts. The Amiga may be good for a few people, but not for the vast majority of computer users given its serious disadvantages. Major industry publications realize this and adjust their content accordingly, to meet the needs of the majority of their readers.

I will say one thing for the Amiga, though. It's one hell of a game machine, something the Mac and PC are not very good at. If Commodore ever comes out with a dedicated game system based on Amiga technology at a low cost ($200 or less), I would run out and buy one.

Sonny Shrivastava
Danville

HIGH TECH CENTERS FOR DISABLED IMPERILED

The California Community Colleges have participated in an Establishment grant to fund High Tech Centers to allow the disabled to have access to adaptive computer technology. The High Tech Centers are providing instruction, guidance, training and support in the use of state-of-the-art adapted computer technology. Access to adapted computer technology will allow most disabled students to fully participate in courses or career paths in which computers play an integral part, and avail themselves of the special benefits provided by computer access to students in general. Skills learned or strengthened in the High Tech Center are put to use in mainstream classes.

There are 51 High Tech Centers serving six thousand disabled students in California. The funding stops June 30, 1990; many of the colleges are having difficulty transferring the staffing of those centers to college positions. The low student-instructor ratio of these classes does not make the self-supporting within the college funding guidelines.

Writing a letter to your local Assemblyperson and State Senator can help. Request that they voice your concerns about the program to Governor Deukmejian and to the people on the Senate and Assembly subcommittees. Assemblyman Robert Campbell chairs Subcommittee #2 on Education, whose members include Assembly members Tom Hannigan, Elihu Harris, Bill Jones, Pat Nolan, Jackie Speier, and Cathie Wright. State Senator Nicholas Petris chairs Subcommittee #1 on Education, which also includes Senators Diane Watson and Rebecca Morgan. Other key legislators (particularly because they are Republican friends of the Governor) are Senators William Craven, Ken Maddy, John Seymour, and Marian Bergeson.

可益電腦

BEST SYSTEMS & PRICES IN SAN GABRIEL VALLEY

KECS SYSTEMS

- 1 MB RAM - 80ns
- 1.2 or 1.44 Floppy
- Mono Graphics Card
- 12" Mono - Monitor
- 101 Enhanced K/B
- 2 Ser/2Par/1Game
- 200W Power Supply
- Mini Tower Case

HARD DRIVE	286-16	386-16SX	386-20	386-25 w/64
No Hard Drive	699	860	1170	1480
40MB MFM	999	1149	1470	1780
65MB MFM	1099	1259	1570	1880
80MB MFM	1249	1415	1720	2030
147MB ESDI	1650	1810	2120	2430

UPGRADE TO:
VGA 640 x 480 Monitor &
VGA Card .....add $350

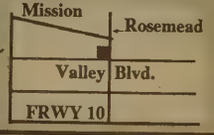
Panasonic Office Automation
Printers

KXP 1124 24 pin narrow	285
KXP 1180 9 pin narrow	175
KXP 1191 9 pin narrow	210
KXP 1624 24 pin wide	430
KXP 1695 9 pin wide	420
KXP 4450 Laser, 8ppm	Call

ADD ON CARD		*KEYBOARDS*	
Monographic Card	22	Focus 2001	48
F.D.C.	11	101 With Click	30
1.44 F.D.C. AT/Xt	22	Chicony 101	45
Printer Card	08	Keytronic 101	49
Color Graphic Card	24	*MOTHERBRDS*	
Multi I/O	26	386 / 20Mhz	270
AT I/O P/S/G	17	386-25 w/64 cache	580
Serial Card	12	286/16 Mhz O/K	200
Clock Card	12	286/12 Mhz Baby (12CPU)	135
Game Card	09	8088-10 Mhz XT	49
W.D. Gen HD Cont.	47	*OTHERS*	
WA-2 H/F Cont.	59	14" Paper White	93
E.G.A. Card	69	RGB Monitor	189
V.G.A. Card 16 Bit	119	EGA Monitor	279
10 + 2 card	35	TEAC 360K Dr.	58
CASES		TEAC 1.44 Dr.	68
AT-JR Case	26	Fujitso 360K Dr.	52
F/S AT Case with 3 openings	42	Fujitso 1.2 Dr.	63
Vert. Case w/230W	165	Mitsumi 1.44	66
Baby Vert. Case	100	1200 Int. Modem	45
POWER SUPPLY		2400 Int. Modem	69
150 W. XT Size	30	Seagate ST 225	179
200 W. XT Size	39	Seagate ST 238	209
230 W. AT Size	42	Seagate ST 251-1	309
200 W. UL/CSA	55	TEAC 1.2	70

KECS
K.E. COMPUTER SUPPLY
4213 Rosemead Blvd., #H-2
Rosemead, CA 91770
Hours: Mon-Sat: 9:30-6:30

(818) 286-6620
Fax (818) 286-6646



HARD TO BELIEVE!!

QUALITY AT A COMPETITIVE PRICE!!!

BONUS! w/Purchase Of VGA System:

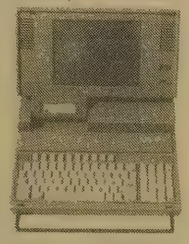
- 3-Button Genius Mouse High Res . . . . . **$30** (Reg. $49)
- DOS 3.3 w/GW Basic And Manuals. . . . **$49** (Reg. $75)
- Upgrade To Our New 101 Enhanced Keyboard . . . . . **FREE** (Reg. $59)
- Upgrade To Our 1024x768 VGA Card w/512K And High Res. Monitor . . . . . **$115** (Reg. $150)

ONE YEAR WARRANTY!!

COMPLETE VGA SYSTEMS

386SX VGA LAPTOP

- 80386SX 16 MHz CPU
- 1 MB RAM
- VGA Compatible w/640x480 16 Gray Gas Plasma Display
- 1.44 MB Drive
- 40 MB Hard Drive (28 ms)
- 2 Serials, 1 Parallel Port



$2995

386SX-16 40MB

- 80386SX 16 MHz CPU
- AMI BIOS
- 1MB Memory on Board
- 1.2 High Density Drive
- 40MB Hard Drive 28MS
- Hard/Floppy Controller 1:1 Interleave
- 2-Serial, 1-Parallel, 1-Game
- VGA Card 800x600
- Mini Tower Case w/Keylock
- 200W Power Supply
- 14" VGA Monitor
- 101 Enhanced Keyboard

$1675

386-20 40MB

- 80386 20 MHz CPU
- AMI BIOS
- 1MB Memory on Board
- 1.2 High Density Drive
- 40MB Hard Drive 28MS
- Hard/Floppy Controller 1:1 Interleave
- 2-Serial, 1-Parallel, 1-Game
- VGA Card 800x600
- Mini Tower Case w/Keylock
- 200W Power Supply
- 14" VGA Monitor
- 101 Enhanced Keyboard

25 MHz $2135

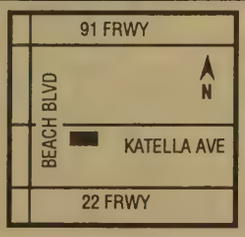
$2085

386-33 CACHE 40MB

- 80386 33 MHz with 32K Cache
- Phoenix BIOS
- 1MB Memory on Board
- 1.2 High Density Drive
- 40MB Hard Drive 28MS
- Hard/Floppy Controller 1:1 Interleave
- 2-Serial, 1-Parallel, 1-Game
- VGA Card 800x600
- Mini Tower Case w/Keylock
- 200W Power Supply
- 14" VGA Monitor
- 101 Enhanced Keyboard

$2875

CALL FOR OTHER CONFIGURATIONS



MA/ COMPUTER PRODUCTS

8220 KATELLA AVE. #E, STANTON, CA 90680

714-897-2160

HOURS: M-F 9 to 5

Prices Subject To Change Without Notice.

Letters to all these people can be addressed to them at the State Capitol, Sacramento, CA 95814. When you write your letter, be sure to ask for augmentation or a reallocation of current community college funding.

If you don't know who your local representative is, call Helene Maxwell (415/436-2582) or Dee Konczal (805/654-6400 ext. 1243). For more information about the High Tech Centers, call me at (408)223-0619.

Linda Gibson
Evergreen Valley College
San Jose

PERSTOR RESPONDS TO USER PROBLEM

This letter is in response to a letter written by Jeff Sampson entitled "Another Side of Perstor" published recently in *MicroTimes*. In his letter, Mr. Sampson tells of the problems he encountered installing the Perstor controller. We don't like to lose a customer, even if he jumps to the wrong conclusion, and we would like to address several issues he brings up.

He said that an installation instruction (for modifying the setup to indicate that no hard disks are installed) was not included in our documentation. In fact, this step is on page four of our manual.

He then wrote that he ran performance tests on the Perstor controller and compared it to an MFM 1:1 controller. The Perstor controllers will deliver performance equal to or greater than any 1:1 controller when measured in a dynamic operating environment. The Perstor controllers are relatively fast controllers, having a 9Mbits per second data rate, compared to 7.5Mbits for RLL boards and 5Mbits for MFM boards.

He noted that he obtained an RLL controller for his drive, yet it is inadvisable to use RLL boards with MFM drives because RLL encoding operates above the MFM drive specification. Because ADRT works within the MFM drive specification, Perstor controllers work with both MFM and RLL drives. Mr. Sampson also wrote that Perstor uses an enhanced RLL variation encoding. ADRT is actually a modified 3370 DK code structure that differs greatly from ERLL.

Finally, Mr. Sampson noted that "Neither of the cards will work with the program I use, Spinrite," and that "Version 2 will operate with the Perstor but not the DTC cards." We have tested our boards with Spinrite, and as long as the Perstor controller has the latest revision BIOS (1.05 on the 8XT model, 1.07 on the 8AT model, and 3.03 on the 16 bit model), no problems will occur with this program.

Woody Liswood, who originally reviewed the Perstor product, did not have these problems. When the boards are measured on a scale of disk drive capacity/performance, they are one of the best overall values available.

Christi Ferris
Communications Manager
Perstor Systems Inc.
Tempe, AZ

CZECH ENTREPRENEUR SEEKS STRATEGIC PARTNERS

We are now free, after such a long time. And allowed to make small businesses. I am a part-time businessman, re-inking ribbons in cartridges for printers, like Epsons, Centronics, Citizens, Stars, etc. I would be very much obliged to readers of this magazine if they would help me by sending their already used cartridges with or without ribbons. Everyone gets a free gift (unused postage set of commemorative Czech stamps, or a book). Thank you.

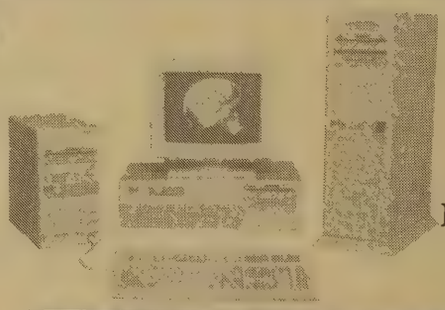
Milan Stola
PO Box 48
66902 Znojmo 2
Czechoslovakia

5th YEAR ANNIVERSARY SALE!

SALES • UPGRADES • SERVICE • SUPPORT AFTER SALE

SCT 386-33MHZ 32 CACHE
- U.S.A. Made Motherboard, Intel 80386-25/33 CPU
- One 32 Bit Memory Bus. Expandable To 64 Meg Of Memory
- 1 Meg RAM
- 1.2 Meg Floppy
- 40 Meg Hard Drive (28 MS)
- 16-Bit VGA (800x600) 256K
- VGA Monitor 14"
- 2 Serial/1 Parallel/1 Game Port
- 101 Enhanced Keyboard
- Tower Case

$2799



ALL SYSTEMS HAVE ONE YEAR PARTS & LABOR WARRANTY!!

SPECIAL OFFER!
Mouse $35
Modem (2400) $95
Printer w/Cable $189
40MB Hard Disk ... $299

SCT 386-25MHZ
- Zero-Wait State
- 1 Meg RAM
- 1.2 Meg Floppy
- 40 Meg Hard Drive (28MS)
- 16-Bit VGA (800x600) 256K
- VGA Monitor 14"
- 2 Serial/1 Parallel/1 Game Port
- 101 Enhanced Keyboard
- Tower Case

$2199

SCT 286-12MHZ
- Zero-Wait State
- 1 Meg RAM
- 1.2 Meg Floppy
- 40 Meg Hard Drive (28MS)
- VGA (800x600) 256K
- VGA Monitor 14"
- 2 Serial/1 Parallel/1 Game Port
- 101 Enhanced Keyboard
- Mini Tower Case

$1499

SCT 286-12MHZ
- Zero-Wait State
- 1 Meg RAM
- 1.2 Meg Floppy
- 40 Meg Hard Drive (28MS)
- Mono Card
- Mono Monitor
- 2 Serial/1 Parallel/1 Game Port
- 101 Enhanced Keyboard

$1099

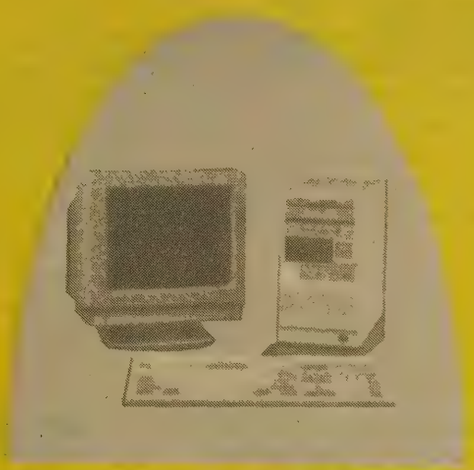
WE MAKE ANY CONFIGURATION...CALL NOW FOR MORE INFORMATION

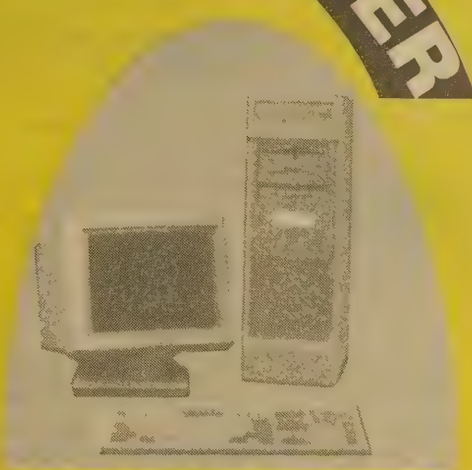
SCT
Select Computer Technology
6881 Stanton Ave., Unit B
(1/2 Blk. N. of Orangethorpe on Stanton)
Buena Park, CA 90621

Tel: (714) 739-1217
Fax: (714) 739-2063
HOURS: Mon-Fri. 9-5, Sat. 10-3

BIG $avings AT COMPUTER PACER

BEST QUALITY
BEST PERFORMANCE





$369

PACER 8088-10
TURBO SYSTEM

- IBM XT Compatible
- 4.77/10 MHz CPU
- Phoenix Bios
- 512K Ram on Board
- 360K Floppy Disk Drive
- 150W Power Supply
- Parallel Printer Port
- Game Port • Serial Port
- 101 Enhanced Keyboard
- Clock & Calendar
- Desktop Case w/Reset Button, LED Light & Keylock

$669

PACER 286-12
VERTICAL SYSTEM

- 12 MHz 80286 0 Wait State
- 80286-12 Intel CPU
- 1 Meg Expandable to 4 MB
- 640K RAM on Board
- 1.2 Floppy Disk Drive
- WD Hard/Floppy Controller
- Vertical Case w/Reset Button & LED light
- 200W Power Supply
- 101 Enhanced Keyboard
- Parallel Printer Port
- Monochrome Graphics Card
- Monochrome Monitor w/Swivel Base

$869

PACER 386-SX
SYSTEM

- 386 SX-16 MHz, (8/16 MHz, 0 Wait State)
- 1 MB RAM on Board
- 1.2 MB Floppy Disk Drive
- Super Floppy Disk Controller
- Vertical Case
- 200W Power Supply
- Parallel Printer Port
- Monochrome Graphic Card
- Monochrome Monitor w/Tilt and Swivel Base

FREE Modem
with purchase of any system

HARD DISKS

Seagate ST 225	$205
Seagate ST 238	229
Seagate ST 251-1	349
Seagate ST 296N 80 MB	469
Seagate ST 138	279
Micropolis 1335 71 MB 28ms.	595

PRINTERS

Panasonic KX-P1180 (182 CPS)	$185
Panasonic KX-P1191 (240 CPS)	239
Panasonic KX-1124 (24 pin-200 CPS)	329
Panasonic 1624 Printer	549
Panasonic Laser Printer	1395
Epson Laser Printer	1095

POWER SUPPLIES

150W XT Power Supply	$38
150W XT UL Power Supply	45
200W Baby AT Power Supply (XT size)	48
200W Baby AT UL Power Supply (XT size)	55
200W AT Power Supply	49
200W AT UL Power Supply	59

CASES

AT Jr. Slide Case/XT	$29
5 Slots AT Case (2 Internal)	49
Mini Vertical Case w/200W PS	125
6 Slots Vertical Case w/200W PS	179

I/O CARDS

Multi I/O Card (rechargeable)	$36
AT I/O Card w/2 Serial/1 Parallel/1 Game	29

KEYBOARDS

101 Key Enhanced Keyboard	$34
Amptron 101 Keyboard	45
BTC 102 Keyboard	39

DISPLAY CARDS

Monochrome Graphic w/Printer Port (4464)	$28
Color Graphic Card w/Printer Port	32
640x480 Auto EGA Card	79
VGA Card 16 Bit 1024x768	129
VGA Card 800x600	105

CONTROLLER CARDS

Floppy Disk Controller	$16
1.2M/360K/1.44M/720K Floppy Controller	32
Western Digital Gen Card w/Cable	44
2:1 MFM H/F Controller w/Cable	78
1:1 MFM H/F Controller w/Cable	89

FLOPPY DRIVES

Mitsumi 360KB Floppy Drive	$57
Mitsumi 1.2 MB Floppy Drive	69
Mitsumi 3.5" 720KB Floppy Drive	62
Mitsumi 3.5" 1.44 MB Floppy Drive	76

ACCESSORIES

Internal 2400B Modem	$88
Logitech Hi-Res Hand Scanner	209
Logitech Hi-Res Serial Mouse	79
Genius Mouse	29

SPECIAL
VGA Monitor
VGA 16 Bit Card **$399**

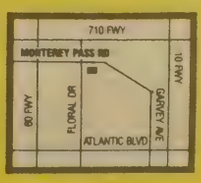
Listed names of products are registered trademarks of their respective companies

WE SERVE MAJOR CORPORATIONS

Computer Pacer

1460 Monterey Pass RD. #B
Monterey Park, CA 91754

Tel: (213) 262-1087
Fax: (213) 264-1481



TERMS: C.O.D. cash, Company & University PO's on approval. All returns must have an RMA number. Prices do not include shipping. Prices subject to change without notice.

Computers Can Remedy Computer-Aided Gerrymandering

BY JIM WARREN

Politicians have increasingly used computers in redrawing voting district boundaries, constitutionally required after each census. The result has become outrageous.

It has proven that our machines are double-edged swords, sometimes cynically used to slash wounds deep into the body politic and scar the democratic process. It's a "hack" that is a most serious, unpunished—and well-rewarded—computer crime.

Computer-aided gerrymandering has become an art form, creating crazy-quilt boundaries, obscene by any standard of fair representation; psychedelic patterns, pleasing only to power addicts.

THE PROBLEM:

POLITICIANS USING COMPUTERS

As usual, computers are not the problem; it's the politicians using them. Those redrawing districts are usually the same people most impacted by them—elected legislators and party hacks.

REALIZABLE FANTASIES

Specifically, the ruling party typically directs redistricting. Across the nation, both major parties show equal ability to abuse their redistricting authority.

1. Protect Majority-Party Incumbents. Their first goal is to construct "safe" districts for favored incumbents.

For this, *they must know the legal residence of these favored few.*

2. Protect The Majority Party. Their second goal is to maximize seats for the reigning party; minimizing seats that can be won by the party not controlling the redistricting.

For this, *they need party registration and party-line voting patterns for each precinct.*

Abuse is aided by redrawing districts in secret, with detail work done by staff who are party loyalists.

SOLUTION, PART 1:

TAKE REDISTRICTING AWAY FROM PROFESSIONAL POLITICIANS

On June 5th, Californians can pass Proposition 119—the "Independent Citizens' Redistricting Initiative," originated by Tom Huening. Supporters range from David Packard and the League of Women Voters to the Center for Public Interest Law and the Paul Gann group. It takes redistricting away from legislators, placing it in the hands of a carefully-defined citizens' Commission, appointed by a panel of retired Appellate Court Judges (not that judges are apolitical, but it's a helluva lot better than elected incumbents redrawing their own districts).

The Commission will evaluate and adopt a redistricting plan from among those submitted by any citizen desiring to do so, conducting all business in public.

[*Beware!* A competing initiative, Prop. 118, keeps redistricting under legislative control, but changes the voting requirements for adoption of new districts. Its passage would essentially guarantee backroom deals designed only to protect incumbents.]

SOLUTION, PART 2:

REMOVE ACCESS TO UNNEEDED INFORMATION

If Prop. 119 passes, let *us* submit a computerized redistricting plan that *provably* excludes use of the data essential for gerrymandering:

1. Exclude access to legal addresses of incumbents.
2. Exclude access to precinct voting patterns.
3. Exclude use of party registration data, except as required by law.

And, when required, publicly define how such data was used.

SOLUTION, PART 3:

LET COMPUTERS DO THE DRAWING

Any redistricting done by humans is susceptible to gerrymandering —with or without computer assistance. (In 1812, the practice was named after Gov. Elbridge Gerry's redistricting of Massachusetts.)

When submitting the computer-generated redistricting plan, *submit the computer's redistricting program and input data, so everyone may verify their neutrality.* With Commission permission, actually

Computer-aided gerrymandering has become an art form, creating crazy-quilt boundaries, obscene by any standard of fair representation; psychedelic patterns, pleasing only to power addicts.

Copyright © 1990 by Jim Warren. All rights reserved. *Jim Warren founded* InfoWorld, *the DataCast proposal for broadcast-based paperless electronic newspapers, Video Initiative, Wireless Digital, Initiative, Inc. and the nation's largest public microcomputer convention. He was founding host of PBS television's "Computer Chronicles" series, founding editor of* Dr. Dobb's Journal, *founding President of the Microcomputer Industry Trade Association and has chaired various computer professionals' organizations. He holds graduate degrees in computing (Stanford), medical information science (UC Medical Center), and mathematics.*

Yes, You Have A Choice!

MICA'S series of systems was designed to give you, the customer, the choice of how you want your system configured. MICA'S 5 year experience in the industry assures you reliability, quality, good pricing, and on top of it all, good service.

PREVIEW SERIES

"An inexpensive quality alternative to IBM systems"

- AT Turbo case w/reset and turbo buttons
- 200 Watt power supply
- True X MHz CPU Motherboard
- 1 MB RAM
- Built-in clock and calendar
- 1.2 MB Floppy Drive
- Serial and Parallel Ports
- Hard and Floppy [MFM] Controller
- Supports 80287, 80387 co-processors as well as Weitek WTL 1167 on the 386 series
- 101 Enhanced Keyboard

$540

CPU/MHz	X MHz	LANDMARK/SPEED	
80286	6/12.5	15.5	$540
80386SX	16	19	$745
80386	20	20	$1054
80386	25	25	$1191
80386	33/CACHE	33	$1742

PRIVILEGE SERIES

"Offers Features for Future Technology Upgrades"

- Small Footprint case w/turbo & reset buttons
- 200 Watt power supply
- True X MHz CPU Orchid Motherboard
- 1MB RAM
- Built-in clock and calendar
- 1.2 MB Floppy Drive
- Serial and Parallel Ports
- Hard and Floppy [MFM] Controller
- 101 Enhanced Keyboard

$805

CPU/MHz	X MHz	LANDMARK/SPEED	
80286	12	15.6	$805
80286	20	26.0	$996
80386SX	16	21.0	$933
80386	20	26.0	$1228

MICA PRO 386

"Offers the BEST VALUE for your Dollar"

- Full size digital vertical case
- 230 Watt power supply
- True X MHz CPU Motherboard
- 1MB RAM
- Built-in clock and calendar
- 1.2 MB Floppy Drive
- Serial and Parallel Ports
- Hard and Floppy [MFM] Controller
- 101 Enhanced Keyboard (deskmodel optional)
- Cache Memory Upgrade Available

$1190

CPU/MHz	X MHz	LANDMARK/SPEED	
80386/20	8/16/20	26.7*	$1190
80386/25	8/20/25	34.5*	$1334

*Landmark/speed running "0" wait state with INTEL 82385 cache controller and using version 1.10

PRIVILEGE DELUXE

"The best in craftsmanship and the latest in technology"

- Full size vertical case
- 230 Watt power supply
- 32KB 2 way set associative cache memory
- True X MHz CPU Orchid Motherboard
- 1MB RAM
- Built-in clock and calendar
- 1.2 MB Floppy Drive
- Serial and Parallel Ports
- Hard and Floppy [MFM] Controller
- Supports 80287, 80387 & Weitek 1167 math co-processor

$1685

CPU/MHz	X MHz	LANDMARK/SPEED	
80386/20	20	33.0	$1685
80386/25	25	41.3	$1810
80386/33	33 (4meg)	55.0	$2435

*Landmark/speed running "0" wait state with INTEL 82385 cache controller and using version 1.10

486-25 Now Available

UP-GRADE OPTION:

MONO	99	360 F. DRIVE	60
CGA	264	1.44 F. DRIVE	74
EGA	438	20 MB H. DRIVE	216
VGA	478	40 H. DRIVE	341
SUPER-VGA	570	80 H. DRIVE	673

PRESENTING MICA's SLIMLINE SYSTEM

"Versatility at its Best"

Introductory Special

System Includes:

- Slimline Case w/150 watt power supply
- 80286-16 MHz Motherboard w/1MB RAM
- LIM EMS 4.0 Compatible
- 16 Bit VGA 800x600 Resolution
- Floppy Controller Supports 2 Drives
- 1.2 Floppy Drive
- IDE Hard Disk Connector (40PIN)
- 2 Serial Ports and 1 Parallel Port
- Western Digital 40 Meg HD
- VGA Monitor
- 101 Key Enhanced Keyboard
- FCC Class B

$1595

Mica COMPUTER CENTER

10204 Norwalk Blvd.
Santa Fe Springs, CA 90670
(213) 944-1850

12007 Wilshire Blvd.
Los Angeles, CA 90025
(213) 473-5668

Mon.-Fri: 8:00 AM - 6:00 PM Sat: 10:00 AM - 5:00 PM (Pacific Coast Time)

Win A Free Trip to the Orient!!—Call For Details

TERMS: All prices subject to change without notice. We accept Mastercard, Visa and Discover. Cashiers check, cash or certified check. Personal and company checks require three weeks to clear. All defective merchandise must have a RMA number. Allow 2-3 weeks for replacement. All defective items will be replaced or repaired at our discretion within the terms of the manufacturers warranty. All returned items must be shipped prepaid and insured. Short shipments must be notified within 48 hours, 15% restocking fee on non-defective goods $5 COD charge plus UPS shipping charge. Call for pricing of any item not included in this price list. Order desk open 8-6 and technical support open 10-4 Monday - Friday. We welcome international orders and corporate accounts. All products mentioned are trademarks of respective manufacturers.

VISA MasterCard DISCOVER

SHAREWARE

For IBM™ and Compatible Computers

Requires DOS 2.1 or higher

- OVER 2000 PROGRAMS
- LATEST VERSIONS, UPDATED DAILY
- GUARANTEED AGAINST VIRUSES
- MOST ORDERS SHIPPED WITHIN 24 HOURS

AS LOW AS **1.75** EACH

GAMES

GAME UTILITIES (#21) Play CGA graphic games on mono, calibrate your joystick, & slow down games on fast computers. Includes HERCULES 1.0, HGCIBM 2.02, VARISLOW, etc.
"TETRIS" CLONES (#1613) Three different versions inspired by the challenging Russian Game.
MONOPOLY (#18) Three differnt versions of the classic Parker Brothers board game. Req. CGA or EGA.
WAR GAMES (#641) Three wargames to challenge you. Req. CGA.
MAZES (#1278) A number of maze games and maze generators. Req. CGA or EGA.
EGA TREK 2.0 (#821) You are in command of the Enterprise. Latest version with great EGA screens. Req. EGA.
SLEUTH (#157) Solve a challenging murder mystery in this interactive crime solving game.
MORRAFF'S REVENGE (#1208) Go adventuring in this dungeon! There are 70 levels to explore with great 3D graphics. Req. CGA.
RISK (#1061) Two great versions of the classic board game. One version for EGA (requires 384K and an EGA 256K card) and one for CGA.
FUN & GAMES WITH YOUR COMPUTER (#530) This assortment of harmless games will bring life into your computer. Req. CGA.
HUGO'S HOUSE OF HORRORS 1.2s (#1743) Great new EGA game in which you must rescue your sweewheart Penelope from a haunted house of horrors. Req. EGA, Hard Disk (800K), and 360K. Arced.
CAPTAIN COMIC (#870) Recover lost treasures from the Planet of Death. A SUPERB arcade-type game. Req. EGA.
DRACULA IN LONDON 1.05 (#98) Get the Count before he gets you. Req. CGA, EGA, or VGA.
FORD SIMULATOR (#711) Get behind the wheel and test drive a Ford. Req. CGA.
ALDO'S ADVENTURE (#698) Navigate treacherous ladders and ramps with nerdy Aldo. Req. an AT, EGA, & color monitor.
SNARF (#1609) Find treasures in Tutankham's maze. Tough. Req. EGA.
HURKLE HUNT (#111) Capture the Hurkle without killing him. Req. VGA.
CYRUS - EGA CHESS (#820) Fantastic EGA chess game. Req. EGA.
VEGAS PRO VIDEO POKER 1.0 (#1172) Hi-quality video poker. No graphics card required, but plays in 640x350 mode if EGA or VGA.
TOMMY'S CROSSWORDS (#1080) Create your own, or play one of 39 puzzles on disk.
CADDIEHACK (#1614) Superb EGA/VGA golf game with great graphics.
PC PRO GOLF 4.31 (#1078) Play the 18-hole "Amherst" Golf Course. Watch out for water hazards! Req. CGA.
PC-JIGSAW 1.10 (#1170) Jigsaw puzzles on your monitor. Req. Hercules, CGA, EGA, or VGA.
PC-LOTTO 2.71 (#1025) Includes CA lotto numbers through 12/9/89, plus predictive routines. Can be used with ANY lotto game. Req. 360K & ansi.sys.

EDUCATION

PROFESSOR WEISSMAN'S ALGEBRA I TUTORIAL 1.5 (#887) Great tutorial with short quizzes on algebra basics. Req. DOS 3.0 & higher and CGA or EGA.
THE WORLD 2.97 (#930) Excellent world map & geography program. Latest version. Req. CGA or EGA.
GEOCLOCK 4.0 (#822) Beautiful world and U.S. maps with day/night areas detailed. Spectacular. Req. EGA or VGA.
SCIENTIFIC/MATH CALCULATOR 2.0 (#655) Does 250 mathematical and physical functions. Great!!
AMY'S FIRST PRIMER (#198) Six great learning programs for preschoolers (ages 4-8). Req. CGA.
SCHOOL MOM (#1445) A colorful menu driven program for kids (ages 4-14). Categories for Music, Art, Spelling, English and Math. Req. 256K and CGA.
FUNNELS AND BUCKETS (#120) An excellent math game for the 4-9 year old. You can choose the type of problem you want to solve.
TEACH-A-TOT (#342) A pre-school learning program for ages 1-5. Teaches numbers, letters and shapes. Req. BASIC and CGA.
SPANISH (#180) A menu driven tutorial program. Includes 750 Spanish/English word combinations. Req. BASIC.
EDUCATIONAL GAMES (#283) Excellent ready to run games for the 4-9 year old. Includes Hangman, Animal Math and others. Req. CGA.
AMERICAN PRESIDENTS 1.7 (#864-865) Read about the presidents, then take quizzes or tests.
ABC FUN KEYS 4.10 (#417) A musical learning game for ages 2-6. Req. graphics card.
WIZQUIZ (#542) 10 instructional levels improve your child's math skills. Req. CGA.
PC FASTYPE 4.0 (#23) Excellent menu-driven typing tutor. Req. CGA or EGA.
EXAM BANK 1.2 (#1259) Excellent menu-driven aid for teachers to store, edit, and revise exam questions - and print tests with answer sheets.

WORD PROCESSING

GALAXY 2.43 (#163) WordStar compatible menu-driven word processor.
PC-WRITE 3.03 (#975-977) Latest version of the popular word processor, with speller. Req. 320K.
PC-WRITE MACROS 1.2 (#1193) 100 advanced macros for PC-Write (v. 3.0 or later).
LEGAL FORMS AND LETTERS (#752) Over 100 diferent "fill in the blank" legal forms and form letters.
PULL-DOWN MENUS FOR WORD PERFECT (#684) Menus for both v. 4.2 and v. 5.0.
WORD PERFECT 5.0 TUTORIAL 1.0 (#1067-1068) 500 visual screens teach you how to use WP v. 5.0. Req. 512K, graphics card, 2 floppies or hard disk.
MOUSE MENUS FOR WORD PERFECT 5.0 (#1422) Mouse menus for both Microsoft & Logitech mice.

ACCOUNTING AND FINANCE

MORTPLAN 3.02 THE LOAN ANALYZER (#1089) Menu-driven amortization functions.
RENTALS 2.04 (#708) A rental property management system. Req. 420K & two flooppy drives or hard disk.
FamTRACK (#599) This easy to use menu driven program will aid in structuring a family budget.
POINT & SHOOT HOME MANAGER 2.0 (#760) Numerous useful databases to "organize" your home and its finances.
EXPRESS CHECK 4.00 (#1740-1741) A checkbook program to track multiple accounts and transactions.
PAINLESS ACCOUNTING 4.0 (#1226-1228) A perfect accounting program for the non-accountant. Req. 640K & hard disk.

DATABASE PROGRAMS

PC-FILE v. 5.0 (1744-1746) Buttonware's latest database program. Replaces both PC-FILE:db and PC-FILE+(v.3.0). Packed with many new features. Req. hard disk.
1 ON 1 = 3!! (v. CC1.5) (#130-131) Superb database program compares favorably to dBase. Uses .DBF files. Req. 512K & hard disk.
FILE EXPRESS 4.32 (#11-12) Fast, powerful, and easy-to-use flat file database program. Req. 320K.
MASS APPEAL 3.2 (#519) General purpose mailing list program. Req. 320K; hard disk recommended.
NAME PAL 1.44 (#580) Make your own "Little Black Book", labels, rolodex cards, etc.
ZIPKEY 1.0e (#16) Superb easy-to-use zipcode database.
CD MASTER 6.00 (#1429) Catalog your CDs and print listings.

GRAPHICS

2D-CAD CURVE DIGITIZER 3.5 - for CGA or EGA (#276-277) CAD program for creating, editing, and plotting 2-D drawings. Req. 256K minimum & CGA or EGA.
CLIP ART CONVERSIONS & UTILITIES #1 (#505) A great assortment of conversion and utility programs for Print Shop, Print Master, First Publisher and Windows Paint.
LETTER HEAD (#332) A program to design and print custom letter heads, envelopes, index cards and labels. Req. Epson or IBM compatible printer and CGA.
TROPICAL FISH (#570) A tropical aquarium before your very eyes. Req. CGA or EGA.
COMPUSHOW 8.01a (#1407) Great utility to display .RLE or .GIF graphic files. Req. Hercules, CGA, EGA, or VGA.
DANCAD 3D 2.0E (#294-295) Very extensive 3D wire frame and high resolution line drawing & graphing program. Req. 512K, CGA and a hard disk.
VGA CAD 1.60 (#707) Full-screen painting, drawing, graphics, and screen design in VGA. Req. VGA card, monitor, 512K, & mouse.
WORDPERFECT 5.0 CLIPART (#1364) 70 clip art images for Wordperfect 5.0.
PRINTMASTER PLUS CLIP ART (#1325-1326) Two disk set containing 600 great graphics for PrintMaster Plus.
PRINTSHOP CLIP ART (#1327-1328) Two disk set containing 600 great graphics for Print Shop.
PRINTSHOP CLIP ART #1 (#1314) Contains nearly 350 graphic images for the Printshop program.
FIRST PUBLISHER CLIP ART #1 (#1027) Disk full of pictures & symbols for First Publisher.
ICONVERT 1.49 (#903) Convert to/from Print Shop, Printmaster Plus, First Publisher, GEM, GIF, and many more. Req. CGA or Hercules.
PC WATCHES - EGA DEMO (#634) Three on-screen demo watches to watch! Req. EGA.
PICTURE LABEL (#1413) A great program that adds graphics from either Print Master or Print Shop to standard address or diskette labels. Req. Graphic Libraries from Print Shop or Print Master and CGA.
GRAPHIC SCREEN DUMP TO PRINTER UTILITIES (#896) Numerous replacements for GRAPHICS.COM, for different printers, including laserjets.

DOS

HOW TO GET STARTED USING MOST SOFTWARE (#25) Make this disk your first buy if you're new to the world of Public Domain & Shareware!
DOS PRACTICE 3.31 (#96) Sessions of simulated interaction with DOS. Great for the beginner!
TUTOR 4.41 (#99) Nine tutorials covering DOS and computer basics!
DOS 3.3 HELP 1.1 (#112) Get help on all DOS commands up through version 3.3.
DOS LEARNING SYSTEM (#1288) This disk based tutorial includes textual explanations, graphic illustrations, and simulations. Requires 512K, CGA and a hard disk.
LIST PLUS 7.1a (#2) The best file view program available. Many new features. -
DOS "DIR" UTILITIES (#703) Many alternatives to the DOS "DIR" command.
DOS "DISKCOPY" & "FORMAT" UTILITIES (#227) Better than using the DOS commands. Many different programs.

MISCELLANEOUS

PROCOMM PLUS 2.4.3 (#536) The shareware version of the extremely powerful yet easy-to-use modem program!
PROCOMM UTILITIES #1 (#625) A collection of powerful utilities to use with Pro-Comm 2.4.2 or later.
ASTRO 2.06 (#1293-1295) Excellent chart calculation program with lengthy textual interpretation of your horoscope. Req. 400K and Hercules, CGA, EGA, or VGA for graphs. Hard disk recommended.
TALKING COMPUTER (#244) A variety of programs that will make your computer talk. Req. BASIC.
LABEL MAGIC (#1512) A superb menu-driven graphic label generator and printer. The program will print mailing labels, envelopes and letter heads. Req. 512K, IBM, EPSON or Hewlett Packard printer, hard drive and CGA.
BIORHYTHMS (#424) Prints chart and compares two people for compatibility. Includes 4 different biorhythm programs.
PIANOMAN & PLAYER PIANO 4.0 (#126-127) Create musical tunes at your keyboard. Includes tune files to play or edit.
EDNA'S COOKBOOK 1.24 (#539) Record, file, list and print your favorite recipes.
THE DIET DISK (v. 8.91024) (#720) Information and aids to get & keep the weight off.
FORM GENERATOR 3.33 (#226) Produce professional looking forms!
BANNER MAKERS (#916) Three programs, including BANNERIFIC 1.0, for making different size banners.
PC-DESKTEAM 2.01 (#656) Nine function pop-up desktop program that rivals Sidekick.
MR. LABEL 4.1 (#220) Good all-purpose labeling program.

UTILITIES

VACCINE PROTECTION AGAINST VIRUS PROGRAMS! (#1405) Disk full of protection programs for your system! A must! Includes FLU_SHOT PLUS, VACCINE, HDSENTRY, CHECKUP & more!
PKZIP / PKUNZIP 1.02 (#1269) The latest version of the outstanding file compression program.
SHEZ 5.1 (#20) An easy way to view (with LIST program - not included) & manipulate archived files (.ARC, .ZIP, .LZH, .ZOO, etc.). Req. hard disk.
AUTOMENU (#73) Creates a custom menu with its easy to use command language.
LQ-LETTER QUALITY PRINT (#369) A program to print in letter quality on most 9-pin printers.
PASSWORD PROTECTION (#1336) A collection of programs that can be used to protect your system from unwanted or unauthorized users.
RAM TEST 3.02 (#796) Tests basic, extended and expanded memory and reports any bad chips in plain English. Great and easy! Latest version.
MEMORY RESIDENT PROGRAM MANAGERS (#286) Two programs to manager memory-resident programs: RESPRO 1.2 & ON CALL 1.02.
POWERMENU 4.50 (#444) New version. Probably the best hard disk menu program on the market!
TREEVIEW 1.1 (#984) Powerful hard disk & file maintenance utility.
DISK OPTIMIZERS (#786) Get rid of file fragmentation and slow disk access time with SST 2.01 and DOG 2.06.
SCREEN SAVERS / BLANKERS (#810) Numerous safe screen blankers to prevent monitor burn - in. Most for mono or CGA.
ARCHIVE 3.0A (#284) For fast floppy backup of hard disk systems, & utilities.
EPSON PRINTER CONTROL UTILITIES (#802) Menu-driven programs to control Epson printer functions, including FXMASTER 3.31E & more.
ON SIDE 1.02 (#767) Great sideways printing program with built-in font editor. Req. Epson or IBM Graphics printer.

ADULTS ONLY - XXX RATED

YOU MUST BE OVER 21 & SIGN THE ORDER FORM.
ALL ADULT SOFTWARE REQUIRES CGA UNLESS OTHERWISE NOTED. THIS IS JUST A SMALL SAMPLING OF OUR ADULT DISKS. WE ALSO HAVE MANY ORIGINAL GRAPHIC IMAGES (in .GIF format) AVAILABLE ONLY FROM US.
ADULT CARTOONS (#215) German-made animated porno cartoons.
ASTROTIT & BAD-BAD (#317) Two graphic porno games. How quick are your fingers?
XXX-RATED PRINTMASTER PLUS (#318) A graphics clip art library disk. Requires Printmaster Plus.
XXX-RATED PRINTSHOP (#319) A graphics clip art library disk. Requires Print Shop.
MAXINE HEADBOOM (#533) Digitized XXX-Rated animation of Maxine at work.
THE HARD CORE SHOW (#85) An X-Rated slide show.
NASTY GIRL (#433) You won't want her to meet your mom.
STRIP BLACK JACK 1.3 (#428) Hold on to your pants.
STOP OR YOU'LL GO BLIND (#1674) XXX-Rated high-quality animated display.
BONK & BOFU (#1673) XXX-Rated high-quality animated displays.
ON TOP & IN OUT (#744) XXX-Rated high-quality animated displays.
1 ON 2 (#745) XXX-Rated high-quality animated display.
FANTASY (#961) You're a participant in a sexual fantasy.
EAST SUCKS WEST (#1716) Superb-quality VGA color animation. XXX-Rated. Req. VGA.
MANDY (#1665-1667) Superb-quality VGA animation. XXX-Rated. Req. VGA & hard disk.
OH, ANGEL! - Part 1 (#1668-1669) Superb-quality VGA animation. XXX-Rated. Req. VGA and hard disk.
BEACH BALL (#1670-1672) Superb-quality VGA animation. XXX-Rated. Req. VGA and hard disk.
SHAUNA (#841) Hi-resolution .PIC format. X-Rated. Req. VGA.
LOLLY (#960) Hi-resolution .GIF format. X-Rated. Req. VGA.
ZOE (#1014) Ultra-hi-resolution (and a size 44). Req. VGA.
VGA CELEBRITY NUDES #2 (#1152) Four high resolution pinups of some very famous ladies. Req. VGA.
VGA X-RATED PIX #1 (#1154) Two fine high resolution images in .GIF format. Req. VGA.
EGA X-RATED PIX #1 (#1141) Four high-res images in .GIF format. Definitely X-rated. Req. EGA.
CENTERFOLD #1 (#1642) A high resolution .GIF image in full 256 color VGA. Req. VGA.
VGA PINUPS - THE FINEST COLLECTION #1 (#1677) Beautiful! Hi-resolution .GIF format. Req. VGA.
WHISPER IN MY EAR (#1660) A high resolution .GIF image. Req. VGA.
ENHANCED KEYBOARD (#1656) A high resolution .GIF image. Req. VGA.
SWEET LIPS (#1658) A high resolution .GIF image. Req. VGA.
VGA "PAGE 3" GIRLS #1 (#1149) Two high resolution pics. from Britian. Req. VGA.
URANUS PROBE (#1675) High quality animated pics. Definitely X-Rated. Req VGA.

NAME_____
ADDRESS_____
CITY/STATE/ZIP_____
NUMBER OF DISKS_____X $ EACH_____
3.5" DISKS - ADD $1.00 EACH_____
CALIFORNIA & FLORIDA RESIDENTS ADD 6.75% SALES TAX_____
SHIPPING & HANDLING USA $4.00
TOTAL_____
COD'S: DRIVER WILL ONLY ACCEPT CASH, ADD $7.00 FOR COD'S
IF PAYING BY VISA, MASTERCARD OR AMEX PLEASE GIVE
CREDIT CARD NUMBER_____
EXP. DATE_____SIGNATURE_____
PLEASE ADD 5% IF PAYING BY AMERICAN EXPRESS.

FREE 112 PAGE CATALOG

FOREIGN COUNTRIES ADD $4.00 FOR SHIPPING

SOFTWARE, RIBBONS, LABELS, BOOKS, DISKETTES, ETC.

NOW AVAILABLE: FREE MACINTOSH CATALOG
WE PAY CASH FOR NINTENDO GAMES
CALL: GAME DUDE (818) 764-2442

ORDER NOW-CALL TOLL FREE
1-800-245-BYTE (2983)

Circle disk numbers or send order on separate sheet
Please mail check or money order to:

BEST BITS AND BYTES

P.O. Box 8225-MT Van Nuys, CA 91409
STORE HOURS: 8am-5pm M-F, SAT 8am-4pm
12104 SHERMAN WAY, NORTH HOLLYWOOD, CA 91605

VISA MasterCard AMERICAN EXPRESS

FAX NUMBER
(818) 764-4851

CALL FOR DISCLAIMER INFORMATION

SPECIAL DISCOUNT PRICES
EXPIRES 05-15-90

1-10	$3.00
11-20	$2.75
21-30	$2.49
31-50	$2.25
51-99	$1.99
100+	$1.75

run the program under their oversight as part of the public presentation of the plan, with their staff and all interested observers able to verify the input-data and program.

RELATED ASIDE: COMPUTER-TRUST IN THE '60S

Some years ago, there was a major experiment in computer-aided instruction in East Palo Alto schools, a minority community.

Project evaluators discovered that the kids often preferred computer instruction over human teachers, trusting the computer to be fair and unbiased, regardless of how well or poorly they did—and regardless of whether their human teachers were minorities.

SHARE WHERE? SHARE HERE!

Send suggestions to Jim Warren, Realizable Fantasies, 345 Swett Road, Woodside, CA 94062. Published proposals will be attributed to their authors unless anonymity is requested.

HELP DESIGN THE REDISTRICTING ALGORITHM

Assuming Prop. 119 passes—and Californians seem sufficiently fed up with previous abuses to make passage likely—a redistricting computer program has some interesting problems. Given data about census blocks and precincts, it must create voting districts with approximately equal populations, that are compact, respect city and county and geographic boundaries, avoid minority imbalance, and encourage competition. (See Prop. 119's "Standards for Plans" in your voter pamphlet; talk to your Registrar of Voters and County Clerk regarding available data.)

Read the Proposition; talk to your Registrar and County Clerk. Then, *forward your suggestions for the ideal algorithm.*

UNRELATED (NONPOLITICAL) NEAT STUFF

I've recently stumbled across a La Jolla mob named Z Microsystems (619/459-1928). They're introducing gadgets worth gettin':

Cheap Color PostScript: The H-P PaintJet's a cheap color printer (about $1,000, street price), but doesn't run PostScript. PostScript color printers have been hyper-highpriced. Z has a PostScript-compatible interpreter driving the PaintJet, yielding an affordable color spread (I trust its compatibility; I know the wizard who wrote it).

250Mb Removable 3.5" Disks: Need removable disks and find 45Mb and 60Mb alternatives just too tiny or too slow? Z's offering 3.5" Hitachi drives with fast, 250Mb, briefcase-sized, removable cartridges (not cheap) and SCSI interfaces.

Furthermore, they have a key—the padlock kind—that locks the disk in the drive, and locks data access to read/write, read-only or "none." (Most Winchesters are hard to write-lock—sez I, after accidentally scrubbing my backup winnie.)

Z folks are technically knowledgeable and responsive. Am I promoting 'em? You betcha! I support them because I believe they support their customers. Either we support the good guys, or the bad guys win at our expense. (Z's been focusing on the Sun workstation market, but if microfolks beat up on 'em, they're likely to serve people-priced computing.) ■

DISK WAR - NEW LOW PRICES

Satisfaction Guaranteed on Freedom™ Premium Diskettes or your Money Cheerfully Refunded

Freedom 5.25" DS/DD Black Disks
19¢
in Lots of 1000
23¢ in Lots of 300
25¢ in Lots of 100
Sleeves Extra

Call For Special Pricing on Data Cartridges, Verbatim, and Maxell Disks
NOW AVAILABLE
Color Diskettes
CALL
For Special Pricing

CERTIFICATION
Every Freedom™ disk has a lifetime warranty and is tested and certified to be 100% error free, and meets or exceeds ANSI standards. Your money will be cheerfully refunded within 30 days if you are not satisfied.

Order Hours:
Monday - Friday
7 am - 5 pm Pacific Time

Freedom 3.5" DS/DD Blue Disks
49¢
in Lots of 500
59¢ in Lots of 100
69¢ in Lots of 50
user labels $1.50/50

NEW LOW PRICES ON PREFORMATTED DISKETTES!!

Freedom 5.25" Black Hi-Density 1.2MB AT Disks
47¢
in Lots of 300
49¢ in Lots of 200
54¢ in Lots of 100
sleeves included
Dark Blue Disks - Add 10¢

5.25" User Labels and WP Tabs $2.00/100
Tyvek™ Sleeves Substituted $3.00/100
VISA • MASTERCARD • CASH • COD's
PRICES SUBJECT TO CHANGE WITHOUT NOTICE

MEDIONIX, INC.
243 N. HIGHWAY 101, STE. 18 • SOLANA BEACH, CA. 92075
(800) 722-0166
We Ship Via UPS Within 24 Hours • Shipping and Handling Extra

Freedom 3.5" DS/HD Disks 1.4MB Disks
$1.49
in Lots of 100
$1.79 in Lots of 50
user labels
$1.50/50

BUSINESS SOLUTIONS

Computing On The Go

Better Keyboards, Tandy's Portable Word Processor

BY ED KAHN

A Continuing Series On Portable Computing

Portable computing has become a huge business with magazines and other specialized products hitting the market every day. What was once a niche market is now as big as the whole industry used to be.

For many years, small computers were so much less powerful than their desktop siblings that portables were used only when the job required portability. Few wanted to accept the necessary compromises of using a laptop as an only computer.

Now, miniaturization has gone so far that it is possible to do virtually everything on a portable that you can do on a deskbound installation. With color portables, the final frontier has been crossed. A buyer today has a wide range of products from which to choose, going from the smallest hand-held units through the notebook models all the way to the muscle-building beasts that are more appropriately called transportables than portables.

A number of trends are obvious. Hard disks are moving to 40Mb as a standard. Even on the tiny Compaq LTE notebook computers, this storage capacity is available. The second trend is that VGA displays are taking over...and for good reason. Zenith's successful line of 8088 and 80286 portables are now offered with either CGA or VGA displays. As far as I am concerned, the importance of this shift is not so much for convenience on the portable itself, but rather for using an external color monitor. The difference becomes so important that I am not interested in using a CGA-only computer. Harsh words, but anything less than an EGA display on a color monitor makes it difficult to work for long periods of time. If you are using a monochrome display, there is no problem with CGA.

BEATING THE KEYBOARD LIMITATION

One of the main limitations of portable computing is the keyboard compromise. I love my keyboard and always am sorry to have to use even the best that come with laptops.

I don't seem to be alone in this attachment, as the first full-size keyboard for portables is now available. The GenoVation Model P101 keyboard ($295) carries an introductory price of $199.95. The design concept is clever.

The keyboard plugs into the printer port with a special cable that also allows you to plug the printer into a piggyback port on the keyboard cable. Thus, you have the keyboard plugged into the printer port and the printer going into the keyboard cable. Software included with the keyboard then tells the printer port to accept keyboard input through the parallel port. At least that's the way it is supposed to work...and pretty much does.

But there are a few problems. I call up WordStar through a batch file that loads a bunch of macros through ProKey Plus ($99.95)—still my favorite keyboard redefinition program. Version 5.0, by the way, has greatly expanded capabilities and a much easier interface than earlier versions. It is simple to edit and redefine on the fly. My computer, however, freezes up every time I invoke the word processor through ProKey when using the P101 keyboard. You can overcome this through using the keyboard redefinition program that comes with the keyboard—adequate for most simple applications.

A second problem is that because the keyboard information comes

For many years, small computers were so much less powerful than their desktop siblings that portables were used only when the job required portability. Now it is possible to do virtually everything on a portable that you can do on a deskbound installation.

Copyright © 1990 by Ed Kahn. All rights reserved.

AT COMPUTER CITY YOU'LL TALK WITH PEOPLE WHO UNDERSTAND COMPUTERS.

BECAUSE THEY'RE THE SAME PEOPLE WHO MAKE THEM.*

At Computer City Supercenter, we're introducing a new idea in computer stores.

Under one roof, we assembled more than 40 of the biggest names in the computer business. Just like a trade show. So you can browse, try systems and ask all the questions you want.

You can actually meet the manufacturers' representatives, the people who know their computers best. Which means you get expert answers and expert advice.

And software, do we have software. Nearly 1,000 of the newest and most popular titles available.

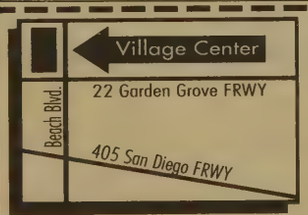
Computer City has everything else you could possibly need. Like desktop publishing in the Graphix Zone. Fax machines and office supplies. A service lab. How-to classes and automated training. A networking activity center. And a family center where your kids can use their imaginations to play and learn with computers.

All in one place. So your computer shopping is convenient, economical and fun.

Come by Computer City Supercenter. And experience a whole new idea in computer stores.

COMPUTER City SUPERCENTER™
Not Just A Store It's An EXPO

*These manufacturers and many others are available to meet with you personally. Please call for information regarding their schedules.



Inquire about openings for Sales Positions.

7901 Garden Grove Blvd.
Garden Grove, CA 92641
(714)892-0070
FAX (714)894-1873
Graphix Zone
(714)891-2829
STORE HOURS:
10 am to 7 pm Mon - Sat
12 noon to 5 pm Sun
10 am to 5 pm Sat March 31

COMPUTER City SUPERCENTER™
Not Just A Store It's An EXPO

VISA MasterCard

Mail or bring coupon to Computer City to receive one month's FREE membership.

Name_____
Address_____
City_____
State_____ Zip_____
Phone ( )_____ MC

RESOURCES

P101 Keyboard $295
GenoVation Technologies, Inc.
1415 East Edinger Avenue
Santa Ana, CA 92705
(714)285-0304

Microsoft Works $149
Microsoft Corporation
16011 NE 36th Way
Redmond, WA 98073
(206)882-8080

OmniKey Plus $119
Northgate Computer Systems, Inc.
P.O. Box 41000
Plymouth, MN 55441
(800)548-1993

Prokey Plus $99.95
RoseSoft
P.O. Box 70337
Bellevue, WA 98007
(206)454-7424

WP-2 $349
Tandy Corporation
One Tandy Center
Fort Worth, TX 76102
(817)390-3011

in through the parallel port, certain operations simply do not work as smoothly as with the standard keyboard. **Control-Alt-Delete**, for instance, does not work from the P101. Interestingly enough, if you press the **Control** and **Alt** keys on the GenoVation and the **Delete** on the portable's keyboard, the computer will do a warm boot.

A third problem is that there is conflict with some software, including Microsoft Works ($149)—one of the best programs for a portable because it includes completely satisfactory modules for most of the applications we usually need: word processing, spreadsheet, database manager, and communications. Microsoft Works is rapidly becoming one of my favorite programs because it is so simple to operate, has a uniform interface for all of its modules, and has great tutorials included. But Works is put together in a way that causes problems for the P101. GenoVation mentions this in their documentation, which makes me suspect that other programs will also have problems with this keyboard.

In any case, these may be minor inconveniences, depending upon your software. If you routinely work with a laptop keyboard that frustrates you, have a look at the GenoVation P101. The keyboard itself works well and has a nice feel. It is easily installed and comes with a bunch of useful software utilities in addition to the installation program.

I still prefer the function keys along the left rather than across the top, but this keyboard is certainly adequate, and better than what you usually get on portables.

I must say that my personal preference is for portables to include a port for attaching any keyboard. My favorite is still the Northgate OmniKey Plus ($119). This keyboard still has the best feel and layout for my money. But it will not work with many portables because they lack the necessary port.

Also, the GenoVation keyboard uses very little battery power because there are no LED indicators. The P101 is really designed for portables—something that cannot be said about any other keyboard.

COMPUTER OF THE MONTH: THE TANDY WP-2

Although small computers have been around for a long time, the portable revolution really began with a host of similar computers typified by the Radio Shack Model 100. There were other models offered by NEC and Olivetti, but all of them were based on a design by Kyocera of Japan.

In any case, these little four-pound computers inspired many other models and were the first lightweight computers that were more than toys. They had a full-sized keyboard and were quite adequate for many tasks. They became especially popular with journalists. Their limitation was that they offered a relatively small display: about eight rows by 40 columns. By the end of their popularity, there were hundreds of add-on programs that would allow you to soup up these little wonders in many different ways. You were still stuck with a small display, but the tradeoff was that the unit was powered by a few AA batteries, which lasted for many hours. Through the built-in communications program, you could easily transfer the files either to a desktop computer or send them through a modem to your destination.

Today the smallest full-powered computers, costing thousands of dollars more, still have to go a long way to beat these old favorites. Perhaps no computer has enjoyed a longer life than the old Model 100 and its cousins. Mine is still in regular service, as my wife still likes it better than any model I have offered her for typing recipes. She types the entries and I transfer them to a desktop or floppy for long-term storage and formatted printing—which can actually be done directly from the portable if you connect a printer.

However, Tandy has finally come out with a successor that offers less and more. Less in the sense that the new model WP-2 is only for word processing. You cannot program in BASIC as you could on the earlier model. But the screen now gives you 80 columns, there is a full 54K of memory available for data files, the unit weighs a little over three pounds and is about one inch thick. For $349, this is a bargain.

This is a good deal more sophisticated than the earlier models. For one thing, because it is designed primarily as a word processor, a good deal of software is built into ROM. This includes a full 100,000-word spelling checker which can be run either to check a word or document or beep every time you type a word that it doesn't know. (My typing skills are too imperfect for this to be anything more than an annoyance.) In addition, there is a thesaurus which also boasts a vocabulary of 200,000 words. These capabilities go far beyond what is available in other machines of this size.

You can do all of the routine operations like cut and paste, find and replace, and block off words, paragraphs and the like. This is a sophisticated machine.

The memory setup is equally advanced. It comes with 32K and is expandable to 64K. But in addition, you can attach a number of storage devices including a disk drive ($219.95), a cassette recorder or a 32K memory card ($119.95). The memory cards, about the size of a credit card, plug into the side of the computer. They contain their own power supply and are an easy and efficient way to store data. Tandy has some plans to release other memory cards that contain application programs, but I see the value of the computer in its word processing abilities.

In addition to word processing, there is built-in communications software much like the program on the old Model 100s. A modem easily attaches through the built-in serial port. There are also calendar and phonebook functions. Once again, they are not really powerful, but could be useful on the road.

The real value of this computer, complete with its own slipcase and reasonable documentation, is as a word processor that can transfer files either through a cable or a modem to a full-featured desktop machine. A small weight and price make this a portable alternative to consider. ■

Tandy's new model WP-2 is only for word processing. You cannot program in BASIC as you could on the earlier model. But the screen now gives you 80 columns, there is a full 54K of memory available for data files, the unit weighs a little over three pounds and is about one inch thick. For $349, this is a bargain.

THE COMPUTER FACTORY

APPLE

Macintosh® Plus
■ Ideal entry level ■ Transportability ■ Affordability ■ 1 Mb RAM exp. to 4 Mb ■ 800K 3.5" drive ■ Keyboard and mouse ■ Apple Hypercard.
List $1799
CF Sale Price **$1199**
CF Credit **$40**/mo.

Macintosh® SE Dual Drive
■ Easy to learn, easy to use ■ 1 Mb RAM ■ 1 exp. slot ■ Two 1.44 Mb FDHD drives.
List $2569
CF Sale Price **$1799**
CF Credit **$55/mo.**

Macintosh® SE/30
■ Highest performance ■ Internal 030 direct slot ■ 1 Mb RAM, exp. to 8 Mb ■ 3.5" FDHD floppy drive
List $3869
CF Sale Price **$2799**
CF Credit **$85/mo.**

Macintosh® IIcx
■ Versatile, powerful ■ 68030 microprocessor, full 32 bit processing at 16 MHz ■ 1 Mb RAM, exp. to 8 Mb ■ 1.44 Mb 3.5" drive.
List $4699
CF Sale Price **$3149**
CF Credit **$95/mo.**

Macintosh® Portable
■ **40 Mb Apple hard drive** ■ Intelligent power management ■ Intuitive graphic interface ■ Superior graphics ■ Powerful.
List $6499
CF Sale Price **$4999**
CF Credit **$150/mo.**

Apple, the Apple logo and Macintosh are registered trademarks of Apple Computer, Inc.

CMS
External Drive 30Mb
■ Great addition to any Mac Plus or SE system! ■ 30 Mb ■ 28 ms access drive time. List $899 Save $400
CF Sale Price **$499**
CF Credit **$20/mo.**

LaserWriter II SC
■ 300 dpi ■ 1 Mb RAM ■ Includes toner.
CF Sale Price **$1899**

IBM Savings!

IBM® ProPrinter™ II
■ 240 CPS
†SUP $449

CF Credit **$20**/mo.
CF Special Sale Price **$279**

IBM® Laser Printer E
■ 5 pages per minute ■ 300 dpi ■ 10 fonts included ■ Two font card slots.
†SUP $1495
CF Sale Price **$1195**
CF Credit **$40**/mo.

IBM® PS/2® 30-286
■ 80286 at 10 MHz ■ 1 Mb RAM ■ VGA graphics
†SUP $1995
CF Sale Price **$1299**
CF Credit **$40**/mo.

Monitor extra

Authorized Personal Computer Dealer

IBM® PS/2® 50z-31
■ 80286 at 10 MHz ■ 30 Mb IBM hard drive ■ Zero wait states. †SUP $2895
CF Sale Price **$2049**
CF Credit **$65**/mo.

IBM® PS/2® Small Business Bundle
■ IBM PS/2 30-286 ■ 30 Mb IBM hard drive ■ IBM VGA display ■ IBM ProPrinter III ■ Microsoft Word software ■ Intro training for DOS & Word ■ On-site service.
CF Sale Price **$3921**
No Money Down. CF Credit **$120/mo.**

†Single Unit Price

IBM, PS/2 are registered trademarks and ProPrinter is a trademark of the International Business Machines Corporation

THREE WEEKS ONLY!

FREE! WITH $500 PURCHASE

FREE! 3 DAYS 2 NIGHTS

LAS VEGAS VACATION!

EXCLUSIVE COMPUTER FACTORY OFFER!

For a family of four. One per family. Meals and transportation not included. Subject to terms and conditions on invitation.

NO GIMMICKS OR PRESENTATIONS OF ANY KIND.

HYUNDAI

Hyundai 386SX/40 Mb
■ 80386 SX at 16 MHz ■ Fast 40Mb hard drive (28ms) ■ 1 Mb RAM ■ 6 expansion slots List $2345
Free 18 month warranty
$1679
CF Credit **$55/mo.**

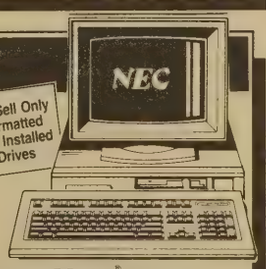
Hyundai 286e/40 Mb
■ 80286 at 12MHz ■ Fast 40 Mb hard drive (28ms) ■ 640K RAM ■ 6 expansion slots List $1845
Free 18 month warranty
$1199
CF Credit **$40/mo.**

*Receive a $50 merchandise rebate coupon by mail good towards your next purchase at any Computer Factory location with the purchase of Hyundai 386s or 286e. Ask your sales representative for details.

Monitor extra

Hyundai First Step XT/20 Mb ■ Includes MicroSoft Works ■ 8088 at 10 MHz ■ Seagate 20 Mb drive ■ 5 expansion slots
List $1195
$695
CF Credit **$25/mo.**

NEC



100% NEC

PowerMate® 286 Plus/42 Mb
■ 80286 at 12MHz ■ Zero wait states ■ 1 Mb RAM exp. to 16 Mb ■ VGA graphics ■ NEC 42 Mb hard drive.
List $2499
CF Sale Price **$1679**
CF Credit **$55/mo.**

NEC® 2200XE Printer
with Free Sheet Feeder from NEC (Save $150)
Special! $299

PowerMate® 386 SX Plus/42 Mb
■ 80386 SX at 16 MHz ■ NEC 42 Mb hard drive (28 ms) ■ 2 Mb RAM ■ 5.25" floppy ■ VGA mono/color graphics. List $3199
CF Sale Price **$2179**
CF Credit **$70/mo.**

CORPORATE SALES SERVICE
Volume Purchasing with value added programs.
(213) 385-1777

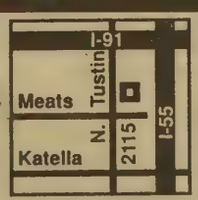
NETWORKING TRAINING
Los Angeles, Pasadena, Irvine. Regularly scheduled classes at 40 centers nationwide.
(213) 207-0089

LEASING
Available at all stores.
Call for details.

L.A. (West)(OPEN SUN.)
12121 Wilshire Blvd.
(213) 207-0089

L.A. (Mid)
3530 Wilshire Blvd.
(213) 385-1777

IRVINE
18662 MacArthur Blvd.
(714) 955-1482



ORANGE
2115 North Tustin, Unit 2
(714) 998-3223

PASADENA
127 South Lake Ave.
(818) 793-3808

Priced for today, support for tomorrow!

Three weeks only. This advertisement supersedes all previous advertisements and cannot be used in conjunction with any other Computer Factory offer. Quantities limited. Not all products in all stores. Illustrations may include optional accessories at extra cost. Not responsible for typographical or printing errors. Prices may vary by store. Certified checks only on sale items. No corporate charges on sale items. All credit subject to credit approval. Monthly payments for CF credit are based on an annual percentage rate of 19.8%. Rates subject to change without notice. Rates may be less in accordance with applicable state laws.

Success At Last!

BY WAYNE A. YACCO

LOCAL AREA NETWORKS

In its previous installment, we left our story—as all good cliffhangers must be left—suspended, with our hero, LANman, entangled in a network mess. Our intrepid protagonist was pouring his soul into a low-speed LAN from Invisible Software, trying to bring it up—without success.

Well, some stories just don't have a happy ending, and "The Case of the Invisible LAN" seems to be one of them. To be fair, the problems are quite likely to be the result of a bad cable in part of Invisible's package rather than the hardware conflicts the company suggested, but unreturned phone calls leave the matter in doubt.

ENTER LANTASTIC

Fortunately, LANman found a plentiful supply of reliable sidekicks waiting in the wings. This month our story takes a much better turn with the able assistance of Artisoft.

LANtastic is another peer-to-peer network with a speed rating of two million bits per second. It too features full NETBIOS compatibility; you can use it with any NETBIOS network software, Novell NetWare for instance. The starter kit includes two proprietary-protocol boards, cable, terminating resistors, good documentation, and Artisoft's LANtastic Network Operating System, with support for up to 120 users. It runs under DOS—using standard DOS file management, DOS hard-disk formats, and very little memory—and standard network versions of popular software run on it. NOS features include network diagnostics, email, print spoolers, and management utilities.

There are some major ease-of-use differences between LANtastic and last month's contender. Only one switch appears on the board; other settings are controlled from software. I was able to successfully install boards in all of the machines that refused to work with the other network. Despite the age of the Compaq Model 1 and the Eagle Spirit, each machine came right on line after software installation. Even an early 80386-based machine which was drafted as the server worked without a hitch. We all held our breath on that 80386, but nothing needed to be changed on any machine.

The only minor glitch came during the software installation. I encountered an inappropriate program reference in the user manual, but quickly found the solution in the hardware installation manual, most of which I had skipped without adverse effect.

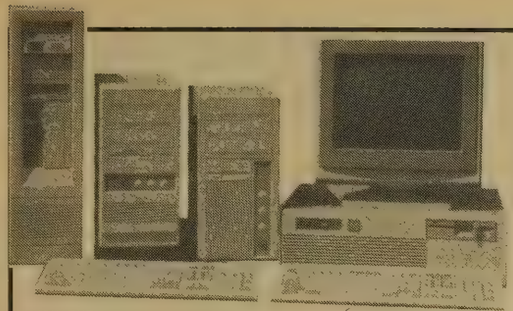
Software installation for each machine took only a minute or two. Users, and the manager's account, were entered via the LAN-management utility, a simple-to-use windowed application. The manual also suggested changes for the Autoexec.bat and Config.sys files which were not required, but which would make things run more efficiently. Logon consisted of three statements that could be entered into a batch file or placed in Autoexec.

I didn't need to call tech support at all in installing the network, but as it happened a small nut was missing from one of the boards' cable connector, so I called to ask for a replacement. I had visions of RMA numbers and long delays, but they didn't materialize. The first good news came when the support line told me how many calls were ahead of mine. Since there was just one such call, I decided to give it three minutes; at two minutes, the message repeated the information that my call was next, and half a minute later I was talking to a technician. "Would you like an RMA, sir, or should we just send you the part?" the man asked. Bad drama, good support!

The management program NET_MGR lets you install your software onto a disk for each node on the system. Once a manager is created, however, the user can assign privileges for other users. There is complete control over resource usage, and an audit trail capability for tracking violation attempts. Other users can be added to the system with a few quick entries that are prompted by a series of pop-up windows. They aren't quite dialog boxes, but they're just as simple to use. There are plenty of advanced commands for fine-tuning the system and getting the best pos-

The best thing about LANtastic is probably the ease with which you can get it up and running. After that, you can tweak to your heart's content while you're already using the network.

Copyright © 1990 by Wayne A. Yacco. All rights reserved. *An editor, writer, and consultant specializing in microcomputers and their business applications, Wayne Yacco writes articles, columns, and reviews for many trade and business publications. He can be reached at Box 269, Burbank, CA 91503.*



FREE POWER SURGE PROTECTOR W/SYSTEM PURCHASE
FREE SOFTWARE INSTALLATION W/SYSTEM PURCHASE
FREE PRINTER CABLE W/PRINTER PURCHASE

LNX AT286-12MHz W/40MB ...$999
LNX 386SX-16MHz W/40MB .$1230
LNX 386DX-25MHz W/40MB .$1699

Upgrade W/1024x768, 16Bit, 256K Mem, VGA Card & 1026x768, 0.28MM Pitch VGA Monitor ADD $395

Genius Mouse/Hand Scanner $39/179
2400B Int. Modem & Software $79
HP Laser IIP/III W/Toner $959/1635
HP 1MB Memory Card IIP/III $239
120MB Tape Backup W/Tape $329
Color/Reg. STAR Printer NX1000 ..... $239/169
Novell Netware/ELS I + II ..... $CALL

ALL-IN-ONE BUSINESS SOFTWARE:

- General Accounting
- Stock/Inventory
- Spreadsheet
- Word Processing
- Sale Lead Manager
- Filing/Data Base

$79
W/System Purchase (Regular $159)

ALL SYSTEMS COME WITH

40MB Western Digital 28MS Hard Disk
1MB Memory, 0 Wait State
Co-Processor Socket Ready
7 Bays Deluxe Mini Tower Case
200W Switching Power Supply
1.2MB High Density Floppy Drive, 5.25"
16 Bit HD/FD Controller, 1:1 Interleave
2 Serial/Parallel/Game/Clock/Calendar
Spill Proof Enhanced 101 Keyboard
Mono Graphic Card & High Res. Monitor

LNX AT386-64 CACHE TOWER W/150MB HARD DISK

80386 True 25 MHz
Weitek/80387 Socket Ready
1MB RAM on Board Exp. to 16 MB, 0 Wait State
64 K Cache on Board Exp. to 256K
Deluxe Tower LED Case W/250W P.S.
1.2 MB High Density Floppy Drive, 5.25"
16 Bit HD/FD Controller, ESDI 1:1 Interleave
2 Serial/1Parallel/Clock/Calendar
Mono Graphic Card
Mono TTL High Res. Monitor
Spill Proof Enhanced 101 Keyboard
150 MB NEC 18 MS Hard Disk

$2699

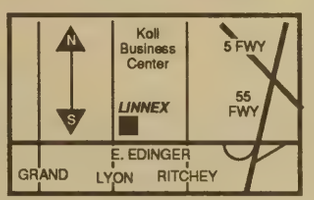
Since 1984, LINNEX has been committed to providing you the most reliable personal computers, professional installation and service at the lowest prices. Visit our showroom and consult with one of our PC specialists.

(714) 558-3399

LINNEX COMPUTERS, INC.

1701 E. Edinger, Suite C-3, Santa Ana, CA 92705
(2 blocks west of 55 FWY, NE corner of EDINGER and LYON)
Hours: Monday-Friday 9:00 to 5:30, Saturday 10:00 to 3:00
FAX (714) 558-3219

AST RESEARCH INC. · Genius · SAMSUNG Information Systems · EVEREX · Panasonic Office Automation · NOVELL · NEC · HEWLETT PACKARD



Prices subject to change without notice. Visa/Mastercard add 3%

HG COMPUTERS

TEL: (714) 278-8892
FAX: (714) 278-8893

FREE
*Auto-Menu
or
*PC Write ..... The Wordprocessor
* w/ Purchase of 386SX, 12MHz AT or 386 25MHz System

THIS MONTH'S SPECIALS!

MULTISYNC MONITOR **$420**
1024X768 0.28 Dot Pitch
TTL & Analogue
ETHERNET N2000 16 Bit $149
386SX $325
Goldstar VGA Monitor 640x480 ..... $285

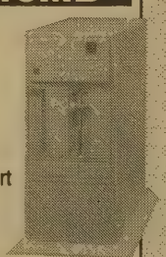
SPECIALIZING IN NETWORK

NOVELL 10-NET, PC MOS

- SOFTWARE PROGRAMS, OPEN SYSTEM
- ACCOUNTING, MEDICAL, AUTOMOTIVE, CONSTRUCTION
- 90 DAY SUPPORT-PHONE & ON-SITE!

386SX 16MHZ-40MB

- 80386 SX 16MHZ CPU
- 1MB RAM On Board
- 5 Opening Deluxe Case
- 230 Watt Power Supply
- 1.2MB 5.25" Floppy Drive
- 16 Bit HDD/FDD Controller
- 1 Parallel/2 Serial/Clock & Game Port
- Mono Graphic Card
- Mono TTL High Resolution Monitor
- Enhanced 101 Keyboard
- 40MB Western Digital 28MS



$1190

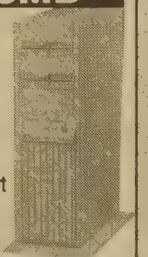
12MHZ-40MB AT

- 80286 12MHZ CPU
- 640K RAM On Board
- 5 Opening Deluxe Case
- 230 Watt Power Supply
- 1.2MB 5.25" Floppy Drive
- 16 Bit HDD/FDD Controller
- 1 Parallel/2 Serial/Clock & Game Port
- Mono Graphic Card
- Mono TTL High Resolution Monitor
- Enhanced 101 Keyboard
- 40MB Western Digital 28MS

$999

386-25MHZ-65MB

- 80386 TRUE 25MHZ
- 1MB RAM On Board
- 5 Opening Deluxe Case
- 230 Watt Power Supply
- 1.2MB 5.25" Floppy Drive
- 16 Bit WD RLL 1:1 Interleave
- 1 Parallel/2 Serial/Clock & Game Port
- Mono Graphic Card
- Mono TTL High Resolution Monitor
- Enhanced 101 Keyboard
- 65MB Mitsubishi 28MS



$1790

MADE IN USA MOTHERBOARDS

MICRONICS
- 20MHz 1 MEG $850
- 25MHz 1 MEG 32K Cache $1460
- 33MHz 1 MEG 32K Cache $1750

PRINTERS

Panasonic P1180	$175
Panasonic P1124	$295
HP LaserJet II	$1640
HP DeskJet Plus	$690

EPSON

LX-810	$189
FX-850	$349
FX-1050	$475
LQ-510	$339
EPL-6000	$1025

UPGRADES

- EGA
- VGA
- MULTISYNC

HARD DISKS

- 80MB
- 150MB
- 330MB

NETWORKING CARDS

- 8 Bit Arcnet ..... CALL
- 16 Bit Arcnet ..... CALL
- 8 Bit Ethernet ..... CALL
- 16 Bit Ethernet $145

- FREE DELIVERY (within 20 Mile Radius)
- 1 YEAR WARRANTY PARTS & LABOR
- DEALERS & CONSULTANTS WELCOME!

Please Call For Prices and Configurations Not Listed
- OAC Leasing & Financing Available

MasterCard VISA

HG COMPUTERS

12110 Severn Way, Riverside, CA 92503
Prices Subject To Change Without Notice

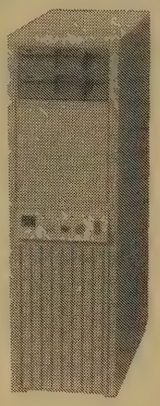
Quality and Performance
in all our systems

MITSUBISHI VISUAL TELEPHONE DISPLAY | TEAC | Keytronic | AMI | RELISYS | NOVELL

AMI 20 MHz 386

Genuine US Made American Megatrends Motherboard
64K High Speed Static RAM Cache
1 MB RAM Expandable to 8 MB on Board
Mitsubishi MR535 40 MB Hard Drive
1.2 MB Floppy Drive
1:1 Interleave HD/FD Controller Card
Paradise 1024x768 16 bit VGA Card
Viewperfect 3 1024x768 Multisync Monitor
I/O Card (2 Serial, 1 Parallel, 1 Game Port)
Fujitsu or Keytronic 101 Keyboard
Standard AT Case With 200 Watt Power

$2690

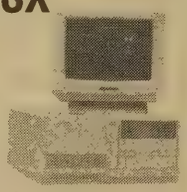


Tower Case Add $90

ADDITIONAL CONFIGURATIONS

	20 MHz			25 MHz			33 MHz		
Hard Drive	Mono	VGA	VGA 1024	Mono	VGA	VGA 1024	Mono	VGA	VGA1024
40 MB	2150	2495	2690	2445	2790	2985	2850	3195	3390
80 MB	2350	2695	2890	2645	2990	3185	3050	3395	3590
150 MB ESDI	2740	3085	3280	3035	3380	3575	3440	3785	3980

16 MHz 386 SX

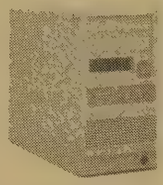


1MB Memory
40 MB Hard Drive
1.2 MB Floppy Drive
1-1 HD/FD Controller
Paradise 16 Bit VGA Card
Relisys VGA Monitor
I/O Card
Keytronics 101 Keyboard
AT Case w/200 Watt power

$1695

16 MHz 286

Baby Tower add $20



1 MB RAM
40 MB Hard Drive
1.2 MB Floppy Drive
HD/FD Controller
Paradise 16 Bit VGA Card
Relisys VGA Monitor
I/O Card
Keytronics 101 Keyboard
AT case w/200 watt power
Tower Case add $120

$1475

Networking Specialists

- Ethernet Cards - $140
- ARCNet Cards - $80
- ACTIVE HUB - $230
- PASSIVE HUB - $20
- FREE ESTIMATES
- ON SITE SERVICE

Call for Custom Quotations

NOVELL Authorized Novell Dealer

Printers, Monitors, Drives

Panasonic KX-P 1180	$180
Panasonic KX-P 1124	295
1.44 MB Floppy Drive	80
1.2 MB Floppy Drive	80
Epson LQ 510	330
Fujitsu DL 3400	510
Seagate 20 MB HD	205
Mitsubishi Hard Drive 40 MB	395
Relysis VGA Monitor & Paradise Card	499

PCT

PRECISION COMPUTER TECHNOLOGY
10531 Humboldt St.
Los Alamitos, CA 90720

(213) 596-8856
Fax: (213) 799-0548
Office Hours: Mon-Fri 9:30-5:30 Sat: 10:30-4:30

Price reflects cash discount
Prices subject to change without notice
2% surcharge on Visa and MC.
5% charge on AMX

master charge | VISA | AMERICAN EXPRESS

sible performance. But the best thing about it is probably the ease with which you can get it up and running. After that, you can tweak to your heart's content while you're already using the network.

If you want a low-speed LAN that's easy to install and has terrific support, LANman says "Try LANtastic. Tell 'em LANman sent you."

RHAPSODY

AT&T has announced a new product that it claims will automatically interact with people and applications across a network to complete tasks. Rhapsody can be programmed to gather information from files, to ask users for data, to send tasks to users, to schedule meetings, to put reminders on

The word on the streets [about Rhapsody] is "awesome." A 20-user system, with server, costs about $8,500 per user.

calendars, to distribute reports for review, to flag potential problems, and to continuously track the status of projects.

The system runs on a UNIX-based server under AT&T's StarGROUP Software LAN Manager Server, and supports MS-DOS-based 80286 and 80386 client machines. UNIX system clients are planned for a future release.

The word on the streets is "awesome." A 20-user system, with server, costs about $8,500 per user.

FURTHER ADVENTURES OF LANMAN?

A note has just fallen into LANman's hands detailing the news of the acquisition of Novell by Lotus. Holy vertical integration! Tune in next month for "The Adventure of the Gobbling Greenbacks." (LANtastic is available from Artisoft, 575 East River Road, Tucson, AZ 85704, 602/293-6363. 2 Mbps Starter Kit, $525; 2Mbps Adapter with no software, $249; boot ROM daughterboard, $99) ■

Quality Service & Support Since 1980

COMPUTER PALACE

VISA MasterCard

2% SURCHARGE FOR CREDIT CARDS BRING AD

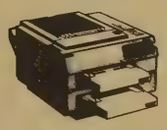
HEWLETT PACKARD

Authorized Hewlett-Packard Dealer

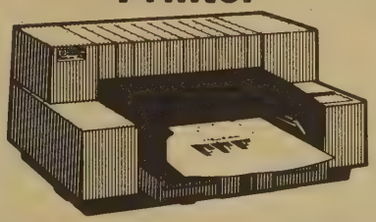
OPEN MON-SAT 9-7

Hewlett-Packard LaserJet IID Printer

- High-resolution laser output
- Two-tray flexibility
- Two-sided printing
- Extensive software support



The Hewlett-Packard DeskJet PLUS Printer



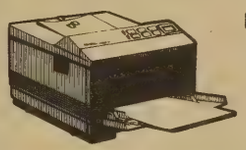
- Laser-quality, 300 dpi resolution
- Fast, quiet, easy operation
- Expanded font capability
- Compatible with leading PCs

NEW!! 3 Year Warranty

$649 less $150 mfr. rebate

$499 AFTER REBATE

The New Personal HP LaserJet IIP Printer

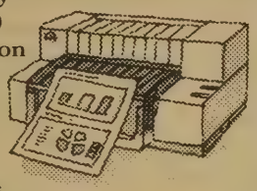


- Most affordable HP LaserJet printer
- Publication-quality output
- Same wide range of HP LaserJet software and font support

$959

Hewlett-Packard DeskWriter Printer For Macintosh

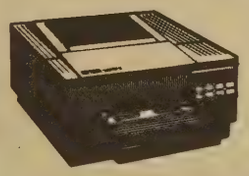
- Laser-quality output—300 DPI resolution
- Variety of fonts
- Personal Desktop convenience



ONLY $789

New Hewlett-Packard LaserJet III Printer

- Highest print quality in its class
- More fonts and scalable typefaces

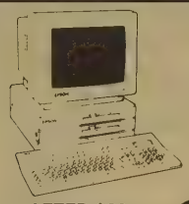


CALL ABOUT OUR ENTIRE EPSON LINE!

EPSON®

Authorized Dealer & Customer Care/Service Center

$200 REBATE ON EPSON LAPTOPS!



EPSON EQUITY™ I+

- Seagate 20MB Hard disk
- Mono monitor

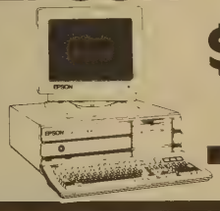
AFTER $50 FAC. CASH REBATE **$899**

EPSON EQUITY™ II+

- Seagate 40MB Hard disk
- Mono monitor

AFTER $150 FAC. CASH REBATE **$1399**

EPSON EQUITY™ 386/20



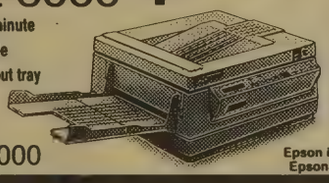
$2549

AFTER $200 FAC. CASH REBATE

- Seagate 40MB Hard disk

EPSON EPL-6000 $999

- 6 pages per minute
- HP compatible
- 150 sheet input tray

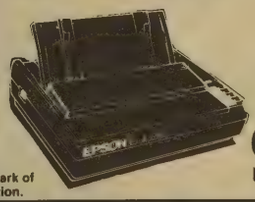


EPL-6000

EPSON EQUITY™ LT-286e LAPTOP COMPUTER

- 80286 12 MHz
- 1MB RAM
- Pop-Out hard disk drive
- Xtra AT expansion slot

EPSON LQ-510



- 24 pin dot matrix
- 80 column carriage
- 180 cps/60cps LQ

$339

Epson is registered trademark of Seiko Epson corporation. Equity is a trademark of Epson America, Inc. MS-DOS is a registered trademark of Microsoft Corporation.

6 CONVENIENT LOCATIONS!

GLENDALE	BEVERLY HILLS (Adj.)	WEST L.A.	WOODLAND HILLS	GLENDORA	RANCHO CUCAMONGA
1029 E. Broadway	8504 W 3rd St., At La Cienega	11909 W. Pico Blvd	22401 Ventura At Shoup	1435 E. Alosta	9798-B Foothill Blvd
(818) 241-2551	(213) 659-1500	(213) 478-4321	(818) 347-3430	(818) 335-4033	(714) 944-4009

UNIX-Based Solutions For The Office Of The '90s

UNIX Expo West

Los Angeles Convention Center

May 7-9

EXHIBITORS (PARTIAL LIST)

Abraxas Software
Acucobol, Inc.
Advance Micro Research, Inc.
Advanced Technology Center
Arix Corp.
Ashton-Tate
BMPD Statistical Software
B & S Multisoft
Britton Lee, Inc.
Bull HN Information Systems, Inc.
Business Management Data, Inc.
Cahners Publishing Co.
Computer Technology Review
Convergent Solutions, Inc.
Data Base Publications
Data General Corp.
Datability Software
Datamation
DEC Professional
Digital Equipment Corporation
Disc
Eicon Technology Corp.
Equinox Systems, Inc.
Four Seasons Software
Group Three Electronics, Inc.
IBM Corp.
Interactive Software Engineering, Inc.
JYACC
Language Processors, Inc.
Microtech Conversions Systems, Inc.
MicroTimes
MIPS Computer Systems, Inc.
Mortice Kern Systems, Inc.
NEC Technologies, Inc.
Oracle Corp.
O'Reilly Associates, Inc.
Overland Data, Inc.
Performance Awareness Corp.
Professional Press
Promark
Pyramid Technology
Quality Software Products

continued

If you're wondering what UNIX has to do with your business, or just starting to confront the problems of a growing office, UNIX Expo West has help for you.

Aimed at business and technical professionals, management, dealers, VARs, and corporate decision makers, UNIX Expo West is designed to provide information and solutions for the changing computing environments of the '90s.

Bill Joy, a pioneer of Berkeley UNIX and vice president of Sun Microsystems, will address some of these issues in his keynote speech "UNIX in the 1990s: An Exciting Decade Ahead." Conferences and tutorials will deal with such varied topics as new features in the latest UNIX, security problems and viruses, multivendor networks, programming, and the hot topic, "The DOS User's Dilemma—UNIX or OS/2?"

Exhibits from a wide range of vendors will offer real-life solutions for current and future business and technical challenges, from publishing and graphics to fault-tolerant systems.

For further information about the Expo, call (312)332-4650.

GRAND OPENING SALE!

(COME VISIT OUR NEW LARGER SHOWROOM & WAREHOUSE AND CELEBRATE OUR 4TH YEAR ANNIVERSARY)

ALL SYSTEMS ARE FCC CLASS B APPROVED, INCLUDE 1-YEAR PARTS & LABOR WARRANTY

IC 386-33-CACHE

- 33 MHz 386MB w/32K Cache
- 1MB Memory on Board (Expandable to 16MB)
- 1.2MB Floppy Disk Drive
- Hard & Floppy Controller (1:1 Interleave)
- 2 Serial, 1 Parallel, 1 Game Port
- 220W Power Supply (UL Approved)
- AT Digital Display Case
- 101 Enhanced Keyboard
- Monochrome Graphic Card
- 12" Monochrome Monitor

$1749

w/65 MB Hard Disk (22 MS) ..... + $399

IC 386-25 MHz 40 MB

- 386-25 MHz MB
- 1MB Memory on Board (Expandable to 16MB)
- 1.2MB Floppy Disk Drive
- 40MB Hard Disk (28MS)
- Hard & Floppy Controller (1:1 Interleave)
- 2 Serial, 1 Parallel, 1 Game Port
- 220W Power Supply (UL Approved)
- AT Digital Display Case
- Monochrome Graphic Card
- 101 Enhanced Keyboard
- 12" Monochrome Monitor

$1549

IC 386SX-16 MHz 40 MB

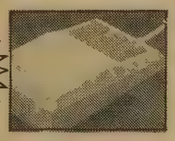
- 386SX-16 MHz MB
- 1MB Memory on Board (Expandable to 8MB)
- 1.2MB Floppy Disk Drive
- 40MB Hard Disk (28MS)
- Hard & Floppy Controller (1:1 Interleave)
- 2 Serial, 1 Parallel, 1 Game Port
- 200W Power Supply
- Baby AT Digital Case
- 101 Enhanced Keyboard
- Monochrome Graphic Card
- 12" Monochrome Monitor

$1195

IC 286-12 MHz 40 MB

- 286-12 MHz MB
- 512K Memory on Board (Expandable to 4MB)
- 1.2MB Floppy Disk Drive
- 40MB Hard Disk (28MS)
- Hard & Floppy Controller (1:1 Interleave)
- 2 Serial, 1 Parallel, 1 Game Port
- 200W Power Supply
- Baby AT Digital Case
- 101 Enhanced Keyboard
- Monochrome Graphic Card
- 12" Monochrome Monitor

$949



GM-6000 Genius Mouse **w/ANY SYSTEM PURCHASE**

- GM-6000 Mouse (Serial Mouse)
- Dr. Halo III Software
- Genius Menu Maker Software
- Three User Manuals
- Genius Mouse Pocket
- Genius Mouse Pad
- 9-25 Pin Adapter

UPGRADE

- 1.44MB Floppy Disk Drive ..... + $75
- E.G.A. (EGA Monitor & Card, 640x350) ..... + $325
- V.G.A. (VGA Monitor & Card, 640x480) ..... + $399

(More Upgrade options available, Please Call!!)

DEALER SPECIALS

FCC CLASS B APPROVED

BARE BONE

IC 38625 — $429
386-25 MHz MB (0K)
220W Power Supply
AT Digital Case
(Not including CPU)
80386-20 or 25 CPU (In Stock) ..... CALL!

IC 386SX — $425
386SX-16 MHz MB (0K)
200W Power Supply
Baby AT Digital Case

IC 28612 — $249
286-12 MHz MB (0K)
200W Power Supply
Baby AT Digital Case

MONITORS

Mitsubishi 1429 (640x480, VGA)	$419
Mitsubishi 1381 (800x600, Multisync)	$489
NEC Multisync IIA (800x600)	$489
NEC Multisync 3D (1024x768)	$619
Sony Multisync 1304 (1024x768)	$649

VIDEO CARDS

ATI VGA (256K, 800x600)	$209
ATI VGA (512K, 1024x768)	$229
Paradise VGA-16 (OEM, 800x600)	$119
Paradise VGA-16 w/512K (OEM, 1024x768)	$149
Genoa VGA (512K, 1024x768)	$199

HARD DISKS

Seagate ST-225, 20MB	$199
Seagate ST-238, 30MB	$219
Seagate ST-251-1, 40MB	$329
Mitsubishi MR-535, 65MB	$379
Conner 80MB, 18MS IDE	$549
NEC-D5655, 155MB, ESDI	$850

Dealer Inquiries Welcome. We accept purchase orders from approved accounts.

PRINTERS

Panasonic 1180 (9 Pin, 192 cps)	$185
Panasonic 1191 (9 Pin, 240 cps)	$219
Panasonic 1124 (24 Pin, 192 cps)	$289
Panasonic 1624 (24 Pin, 192 cps, 132 Col)	$429
Panasonic 4420 (Laser, 6 ppm)	$1195
HP LaserJet IIP (New!, 4 ppm)	$979
HP LaserJet III w/Toner (8 ppm)	$1595
25 Cartridges in One—172 Fonts (for HPII, IIP, IID, & Deskjet Plus)	$299
1MB Memory Upgrade (HP II & IID)	$179
1MB Memory Upgrade (HP IIP & III)	$189

MOUSE/SCANNER

Logitech Serial Mouse	$49
Logitech Hi-Res. Serial	$65
Logitech Hi-Res. Bus	$75
Genius GM-6000 Hi-Res	$49
Genius Scanner w/OCR	$199

MODEMS

1200B Int. Modem	$55
1200B Ext. Modem	$69
2400B Int. Modem	$85
2400B Ext. Modem	$99

IC COMPUTERS, INC.

TEL: (714) 879-1611

807 E. ORANGETHORPE AVE.
SUITE A, ANAHEIM
STORE HOURS: MON-FRI. 9-6, SAT. 10-5

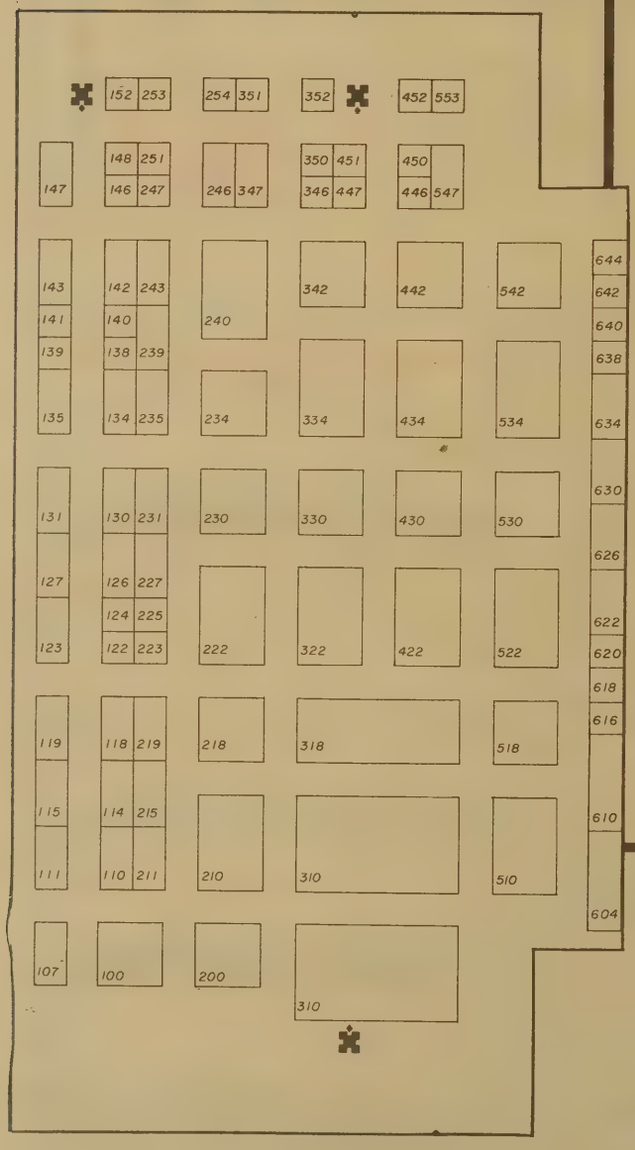
TERMS: COD, Check, Cashier's Check, Money Order, VISA, M/C. No extra charge for VISA, M/C. Price subject to change without notice. We reserve the right to substitute equivalent items. Unauthorized returns subject to 20% restocking fee. Call for RMA number for returns and repairs. Returning items must be sent shipping prepaid by customer.

UNIX EXPO WEST

continued

EXHIBITORS *continued*

SAS Institute, Inc.
Sequent Computer Systems, Inc.
Sequoia Systems, Inc.
Sharebase
Southern California UNIX Users Group
Statware, Inc.
Southwest Data Productions/AT&T
SunExpert Magazine
Sunriver Corp.
Sybase, Inc.
Systematic, Inc.
Systems Integration
Systems Strategies, Inc.
Tandem Computers, Inc.
TBS Services, Inc.
Texas Instruments, Inc.
Toshiba/OEM Advanced Systems
Unipress Software, Inc.
UNIX International
UNIX Journal
UNIX Review
UNIX Today!
UNIXWorld
VISystems, Inc.
Workstation News
Wyse Technology



UNIX EXPO WEST
Schedule of Events

MONDAY MAY 7, 1990

11:00 a.m.-6:00 p.m.			Exhibit Hours
9:00 a.m.-12:00 noon	Tutorials	A1	Overview of UNIX System Internals (Part I)
		A2	An Introduction to X Windows and Toolkit Programming (Part I)
		A3	Object-Oriented Programming in C++ (Part I)
		A4	Basics of UNIX System Administration
9:30 a.m.-11:00 a.m.	Conference	M1	Which UNIX? - Should Anyone Care About OS's in the '90s
		M2	The DOS Users Dilemma - UNIX or OS/2
9:30 a.m. 11:00 a.m.			UNIX System Primer
1:00 p.m. - 2:00 p.m.	Keynote Address		Bill Joy, Vice President Sun Microsystems, Inc.
2:30 p.m. - 5:30 p.m	Tutorials	A1	Overview of UNIX System Internals (Part 2)
		A2	An Introduction to X Windows and Toolkit Programming (Part 2)
		A3	Object Oriented Programming in C++ (Part 2)
		A5	Security Measures for UNIX Systems
3:30 p.m. - 5:00 p.m.	Conference	M3	UNIX Standards - An Update
		M4	Viruses - Prevention and Cure
3:30 p.m. - 5:00 p.m.			UNIX System Primer

TUESDAY MAY 8, 1990

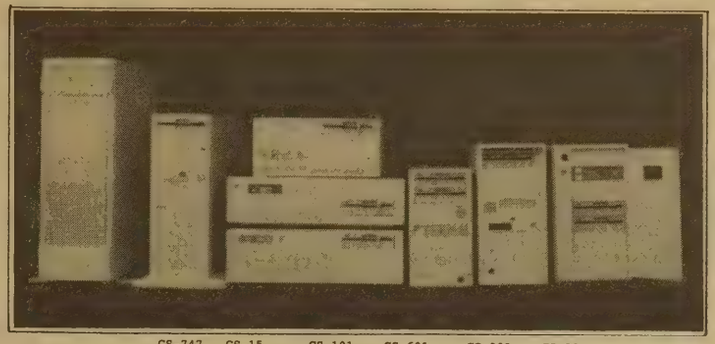
10:00 a.m.-6:00 p.m.			Exhibit Hours
9:00 a.m.-12:00 noon	Tutorials	B1	New Features of UNIX System V Release 4.0 (Part I)
		B2	ISDN - Integrated Services Digital Networks (Part I)
		B3	Local Area Network (LAN) Overview
		A1	Overview of UNIX System Internals (Part 3)
9:30 a.m. 11:00 a.m.	Conference	T1	Security in the Network Environment
		T2	RISC Workstation Comparisons
9:30 a.m.-11:00 a.m.			UNIX System Primer
11:30 a.m.-1:00 p.m.	Conference	T3	CASE: A Users Perspective
		T4	Animation/Simulation
11:30 a.m.-1:00 p.m.			UNIX System Primer
1:30 p.m.-4:30 p.m.	Tutorials	B1	New Features of UNIX System V Release 4.0 (Part 2)
		B2	ISDN - Integrated Services Digital Networks (Part 2)
		B4	UNIX System V Interprocess Communication
		A1	Overview of UNIX System Internals (Part 4)
3:30 p.m.-5:00 p.m	Conference	T5	UNIX Technology in the 1990 s
		T6	Object Oriented Design and Programming

WEDNESDAY MAY 9, 1990

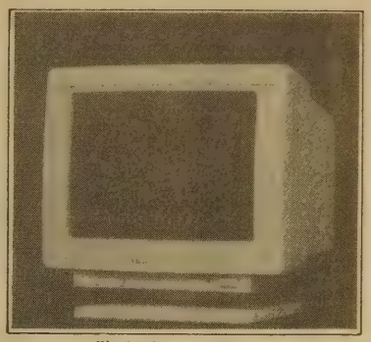
10:00 a.m.-4:00 p.m.			Exhibit Hours:
9:30 a.m.-11:00 a.m.	Conference	W1	X-Windows on a Desktop
		W2	High Speed Network Options
9:30 a.m.-11:00 a.m.			UNIX System Primer
11:30 a.m.-1:00 p.m.	Conference	W3	Perspectives on X Toolkits
		W4	Connectivity Strategies: (...UNIX + DOS + MAC +)
11:30 a.m.-1:00 p.m.			UNIX System Primer
2:00 p.m.-3:30 p.m.	Conference	W5	CAD/CAM Integration: A Users Perspective
		W6	Technical Document Management

ESSENCE

THE ESSENCE GROUP
17150 Newhope Street, Unit #203
Fountain Valley, CA 92708
Tel: (714) 546-3110 Fax: (714) 546-3803



CS-747 CS-15 CS-101 CS-601 CS-901 CS-30
CS-6
CS-10



ViewPerfect 3 1024x768
Multi-Frequency Monitor
0.29mm Dot Pitch
$488.00

SYSTEM BOARD (OK)
- Technology Power TP-386 33MHz M/B w/64K Cache $1550.00
- Technology Power TP-386 25MHz M/B w/64K Cache $1025.00
- Micronics 386 33MHz M/B w/64K Cache $1595.00
- Micronics 386 25MHz M/B w/64K Cache $1395.00
- Micronics 386 20MHz M/B $795.00
- Essence Baby 33MHz M/B w/32K Cache $1195.00
- Essence 386 25MHz M/B w/64K Cache $955.00
- Essence Baby 386 25MHz M/B $755.00
- Essence Baby 386 20MHz M/B $625.00
- Essence 386SX 16MHz 4MB M/B $335.00
- Baby AT 16MHz 8MB M/B (NEAT,EMS LIM4.0) $195.00
- Baby AT 12MHz 4MB M/B (CPU-12,EMS LIM4.0) $155.00
- XT 10MHz 1MB M/B $66.00

ADD-ON BOARD
- Mono/Graphics/Printer Card $30.00
- Color/Graphics/Printer Card $30.00
- EGA Autoswitch Card $70.00
- ATi VGA 640 Card (16bit,256K,640x480) $148.00
- ATi VGA Wonder (16bit,256K,1024x768) $185.00
- ATi VGA Wonder (16bit,256K,1024x768) w/Mouse $220.00
- Orchid Pro-Designer VGA (16bit,256K,1024x768) $265.00
- PVGA-1024 (Paradise OEM,16bit,256K,1024x768) $118.00
- Trident TVGA-16 (16bit,256K,1024x768) $118.00
- Tseng Lab VGA-16 Plus (16bit,512K,1024x768) $145.00
- XT Multi I/O Card (1S,1P,1G,1C,FDC) $36.00
- XT I/O Plus Card (1S,1P,1G,1C) $34.00
- AT I/O Card (1S,1P,1G) $23.00
- AT I/O Card (2S,1P,1G) $27.00
- Floppy Disk Controller (XT) $15.00
- Super FDC - 2 port (AT/XT) $27.00
- RS-232 Serial Card $15.00
- Parallel (Printer) Card $13.00
- Game Card (Dual Ports) $13.00
- Clock Card w/Software $16.00
- Western Digital XT Hard Disk Controller (MFM) $48.00
- Western Digital XT Hard Disk Controller (RLL) $53.00
- Western Digital WDXT-240 AT IDE Bus Adapter $50.00
- AT Dual Floppy & Hard Disk MFM Controller (1:1) w/Cable ..$75.00
- AT Dual Floppy & Hard Disk RLL Controller (1:1) w/Cable ..$98.00
- WD1006V-MM2 1:1 MFM Floppy/Hard Disk Controller $108.00
- WD1006V-SR2 1:1 RLL Floppy/Hard Disk Controller $125.00
- WD1007A-SE2 1:1 ESDI Floppy/Hard Disk Controller $180.00
- DTC 7280 1:1 MFM Floppy/Hard Disk Controller $94.00
- DTC 7287 1:1 RLL Floppy/Hard Disk Controller $112.00
- DTC 6280 1:1 ESDI Floppy/Hard Disk Controller $178.00

FLOPPY & HARD DISK DRIVE
- TEAC / Fujitsu 360K FDD .....$62.00/$60.00
- TEAC / Sony 720K FDD .....$67.00/$67.00
- TEAC / Fujitsu 1.2M FDD .....$75.00/$70.00
- TEAC / Sony 1.44M FDD .....$75.00/$75.00
- Kyocera KC-20B 20MB MFM HDD (60ms,3.5") $193.00
- Kyocera KC-30B 30MB RLL HDD (60ms,3.5") $205.00
- Seagate ST-225 20MB MFM HDD (65ms) $200.00
- Seagate ST-238R 30MB RLL HDD (65ms) $210.00
- Seagate ST-251-1 40MB MFM HDD (28ms) $295.00
- Seagate ST-277R-1 65MB RLL HDD (28ms) $345.00
- Imprimis (CDC) 88MB/120MB MFM/RLL HDD (15ms,3.5") $540.00
- Mitsubishi MR535 40/65MB MFM/RLL HDD (26ms) $340.00
- TEAC SD340 43MB IDE HDD w/Adapter (23ms,3.5",1" thick) ..$355.00
- Western Digital 93044 43MB IDE HDD w/Adapter (28ms,3.5") $325.00
- Toshiba MK-134FA 40MB/65MB MFM/RLL HDD (25ms,3.5") $370.00
- NEC D3142 40MB/65MB MFM/RLL HDD (25ms,3.5") $330.00
- NEC D5661 120MB EDSI HDD (17ms) $665.00
- NEC D5655 150MB ESDI HDD (17ms) $755.00
- Conner CP-3044 42MB IDE HDD w/Adapter (25ms,3.5") $355.00
- Conner CP-3184 84MB IDE HDD w/Adapter (25ms,3.5") $535.00
- Conner CP-3104 104MB IDE HDD w/Adapter (25ms,3.5") $610.00
- Conner CP-3204 204MB IDE HDD w/Adpater (25ms,3.5") $975.00

MONITOR
- Aamazing CM8483E 14" VGA Monitor (.31dp) $328.00
- Aamazing CM8484E 14" UltraVGA Monitor(1024x768,.28dp) ...$388.00
- SamSung MA2565 12" Amber Monitor $78.00
- SamSung MZ4571 14" Flat Screen Paper White Monitor $105.00
- SamSung MZ4575 14" Flat Amber Monitor $105.00
- SamSung ML4571 14" Paper-White MonoVGA Monitor $145.00
- SamSung CK4656 14" RGB Color Monitor (.52dp) $198.00
- SamSung CM4592 14" EGA Color Monitor (.39dp) $295.00
- SamSung CJ4681 14" VGA Color Monitor (.31dp) $355.00
- SamSung CT4581 14" MultiSync Monitor (.31dp) $445.00
- Samtron SC452 14" RGB Color Monitor (.52dp) $185.00
- ViewPerfect 2v VGA Monitor (640x480) $328.00
- ViewPerfect 3 MultiSync Monitor (1024x768,.29dp) $488.00
- NEC 2A SuperVGA 14" Monitor (800x600,.28dp) $498.00
- NEC 3D MultiSync 14" Monitor (1024x768,.28dp) $618.00
- Seiko CM1440 14" MultiSync Monitor (1024x768,.25dp) $548.00
- Seiko CM2050 20" MultiSync Monitor (1024x768,.31dp) $2050.00
- Sony CPD-1304 14" MulitScan Monitor (1024x768,.25dp) $628.00
- Hitachi CM2085 20" Color Monitor (1280x1024,.31dp) $1895.00

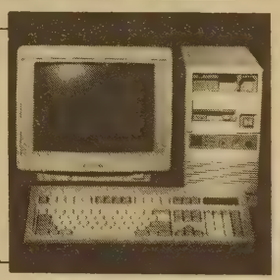
CHASSIS
- CS-6 AT-jr XT Case (3LED,Reset,Turbo,Keylock) $34.00
- CS-10 Mini-AT Case (3FDD/2HDD Openings) $48.00
- CS-12 Full size AT Case (3FDD/2HDD Openings) $53.00
- CS-101 Baby AT Case w/200W P.S. $92.00
- CS-601 Mini-Vertical Case w/200W P.S. $96.00
- CS-15 Mid-Vertical Case w/200W P.S. (Digital) $140.00
- CS-30 Mid-Vertical Case w/200W P.S. (Digital).....$175.00
- CS-901 Mid-Vertical Case w/230W P.S. (Digital) $175.00
- CS-747 Full Vertiical Case w/220W P.S. (8HH Openings) ...$170.00

POWER SUPPLY
- XT-150W Power Supply $38.00
- Mini-AT 200W Power Supply (XT size) $45.00
- AT-200W Power Supply (Full size) $53.00

ESSENCE 386-20 System **$1095.00**

- * 6/20MHz 80386-20 CPU
- * Expandable to 2MB/4MB/8MB/16MB
- * Floppy/Hard Disk Controller
- * Super Mini Vertical Case (shown)
- * Keytronic 101 Keys Keybaord
- * 1MB Memory on Board
- * One TEAC 1.2M Floppy Drive
- * 1 Serial / 1 Parallel
- * 200 Watts Power Supply
- * Page Interleaving / Shadow RAM

Essence 386-25 System $1225.00
Essence 386-25 (64K Cache) System $1425.00
Essence 386-33 (32K Cache) System $1665.00
Essence 386-33 (64K Cache) System $2025.00



ESSENCE 386SX-16 System **$755.00**

- * 8/16MHz 80386SX-16 CPU
- * Expandable to 2MB/4MB/8MB
- * Floppy/Hard Disk Controller
- * Mini-AT Case (3FDD/2HDD)
- * Keytronic 101 Keys Keybaord
- * 1MB Memory on Board
- * One TEAC 1.2M Floppy Drive
- * 1 Serial / 1 Parallel
- * 200 Watts Power Supply
- * Page Interleaving / Shadow RAM
- * Runs 80386 software in a cost effective 16-bit Hardware Environment

** Mini Vertical Case as shown +$15.00

ESSENCE 286-12 AT System **$515.00**

- * 6/12MHz 80286-12 CPU
- * Expandable to 640K/1MB/2MB/4MB
- * Floppy/Hard Disk Controller
- * Mini-AT Case (shown)
- * Keytronic 101 Keys Keyboard
- * 512K Memory on Board
- * One TEAC 1.2M Floppy Drive
- * 1 Serial / 1 Parallel
- * 200 Watts Power Supply

Essence 286-16 AT System $545.00

** Mini Vertical Case +$15.00

ESSENCE 88-10 XT System **$295.00**

- * 4.77/10MHz 8088-1 CPU
- * Expandable to 640K or 1MB
- * AT-jr Case
- * Enhanced 101 Keys Keyboard
- * 512K Memory on Board
- * One TEAC 360K Floppy Drive w/FDC
- * 150 Watts Power Supply

Monitors, Video Cards, and Hard Disk Subsystems, use the prices below. Please call for System Memory upgrade.

KEYBOARD
- Enhanced 101 Keys Keyboard $37.00
- Mitsumi 101 Keys Keyboard (Japanese) $40.00
- Keytronic 101 Keys Keyboard (U.S.A.) $48.00
- Fujitsu 101K Keys Keyboard (Japanese) $48.00
- Focus 2001 101 Keys Keyboard w/Hard Dustcover (Click) $50.00
- Focus 3001 101 Keys Keyboard w/Calculator (Click) $65.00
- Focus Omni-102 Keyboard (Function keys on the side) $65.00

MISCELLANEOUS
- Logitech C9 Hi-Res Serail Mouse $72.00
- Logitech C9 Hi-Res Bus Mouse $82.00
- Internal 2400 Baud Modem $80.00
- External 2400 Baud Modem $105.00
- Panasonic KX-P1180 Printer (9pin/182cps/110col) $175.00
- Panasonic KX-P1124 Printer (24pin/182cps/110col) $280.00
- Panasonic KX-P1624 Printer (24pin/182cps/132col) $425.00
- Panasonic KX-P1695 Printer (9pin/300cps/132col) $425.00
- Panasonic KX-P4450 Laser Printer (11ppm/512K/300dpi) ...$1395.00
- Colorado Memory 40/60MB Tape Backup $258.00

VISA

All parts and systems are guaranteed for one year from the date of purchase. Defective parts must be returned to Essence for repair or replacement. A return authorization number must be obtained before returning any merchandise. Customer must prepay shipping charges for products returned for repair, but Essence will pay return shipping charges. Products repaired or replaced under warranty will be returned to customer, freight prepaid, within 10 days of receipt. Thereafter, only exchange are available for the rest of the warranty period. Price, Specification & Availability may change without any notice. FFAM C.O.D. $4.00 per package. VISA or M/C ach a service charge

MasterCard

Hard Disk Subsystem Upgrade:
- For XT:
  - 20MB w/Controller (60ms) .....+$240.00
  - 30MB w/Controller (60ms) .....+$260.00
  - 40MB w/Controller (60ms) .....+$325.00
- For 286 & 386:
  - 20MB (60ms) .....+$195.00
  - 40MB (28ms) .....+$285.00
  - 65MB (25ms) .....+$375.00
  - 80MB (25ms) .....+$460.00
  - 100MB (25ms) .....+$535.00
  - 120MB (15ms) .....+$585.00
  - 150MB (17ms) .....+$855.00
  - 200MB (25ms) .....+$905.00

Monitor + Video Upgrade:
- 12" Monochrome Monitor w/MonoGraphics Card .....+$105.00
- 14" Monochrome Monitor w/MonoGraphics Card .....+$135.00
- 14" RGB Color Monitor w/ColorGraphics Card .....+$215.00
- 14" EGA Color Monitor w/EGA Card .....+$365.00
- 14" VGA Color Monitor (640x480) w/PVGA-1024 (256K) .....+$440.00
- 14" VGA MultiSync Monitor (1024x768) w/Tseng-Lab VGA (512K) $630.00

Networking The Mac Office

Exchanging Files And Mail With QuickMail

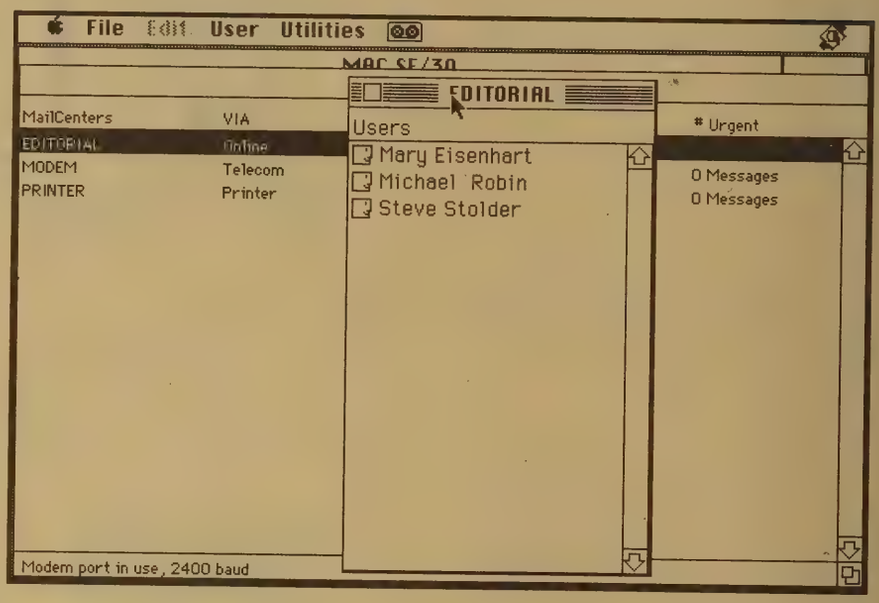
BY MARY EISENHART

Last month we began our foray into the world of Mac networking by connecting three Macs to a laser printer.

Well, as you may have noticed as you travel through life, no sooner do you achieve one goal than you start thinking how nice it would be if you could do all this other stuff, too. In our case, once three editors discovered the joys of sending documents to the printer from our workstations, we decided it was a little ridiculous to keep passing diskettes back and forth every time one of us needed to look at another's work—a pretty frequent occurrence around here. Also, given the fact that we often aren't in the same place at the same time, and adding more paper to my desk is a sure way to consign your message to oblivion, it wasn't a bad idea to have some reliable method of getting messages to each other, either.

Along came QuickMail. And, compared to the DOS networking nightmares recently described by LAN columnist Wayne Yacco, to say nothing of the arcane mysteries of doing the same thing in UNIX, this product is a godsend.

This article has no pretensions to being a complete review of QuickMail, which comes from the good folks at CE Software in beautiful West Des Moines. CE also brings us DiskTop (currently in a new version bundled with GoFer), the MockPackage, QuicKeys, and Vaccine. QuickMail exists in versions for Mac and PC; it's a deep and value-laden product that allows you to construct elaborate networks, build bridges, access remote systems and route downloaded messages to users on the network, and many other things that we'll come back to in a subsequent article when we're past the getting-our-feet-wet stage. (Also, CE has recently shipped version 2.2 of the program, which incorporates more sophisticated tools for remote and multivendor environments and lets you embed spoken messages in your email using MacRecorder from Farallon; we've been using 2.0 and 2.01 for the past several months.)



QuickMail lets you set up MailCenters and assign users to them

BEFORE YOU INSTALL QUICKMAIL

Migrating from a single-user (the Unconnected Mac) to a multiuser work situation, even at this level, requires getting familiar with some concepts you may have managed to avoid quite handily so far. While QuickMail (and most Mac networking packages) are paragons of user-friendliness, the act of networking those Macs creates administrative and housekeeping chores that don't exist in the single-user world. The manuals are simple and accessible, and this is definitely one of those situations where you'd do well to read them before you do anything.

QuickMail works on a wide range of networks and is compatible with most networking standards. For purposes of the relatively low-level networking we're talking about here—running under AppleTalk over PhoneNet connectors—there are essentially two types of network options: server-based, such as AppleShare, which requires one Mac on the network to be exclusively dedicated to use as a server; and distributed, such as TOPS, which does not require a central server.

QuickMail works in both types of configurations (and, though it will run under TOPS, it does not require it to perform its functions among the connected Macs).

In our case, we did not want to go the dedicated-server route. For one thing, we didn't have an extra Macintosh floating around the office to handle this specialized

NEXT MONTH

Next month we'll take a brief vacation from networking issues to address another pressing problem in the Mac office: what to do when your business outgrows its all-in-one software package? We'll talk about a real-life adventure moving a database from Microsoft Works into FileMaker II.

SOS COMPUTERS

We Won't Sell You a Single Computer. We Want To Be A Part of Your Future!

1 Connecting Point in USA MACINTOSH DEALER SOURCE

The Friendliest People and the Best Selection!

We pass on the buying power of over 400 stores as an independent

Connecting Point Center

Macintosh IIcx

- 68030 CPU
- 1 Year Warranty

$3137

IIcx—designed for high performance, maximum expandability, flexibility, & color capability in a versatile system

Monitor & Keyboard - Extra

Macintosh SE

- 20 Mb Hard Drive
- Monitor ■ Mouse

The Mac SE gives you the power to work with large spreadsheets, massive databases, and advanced word processing software

$1947

Authorized Dealer

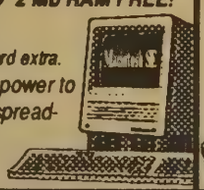
Keyboard - Extra

BUSINESS COMPUTER FINANCING, LEASING & TRADE-IN's

Macintosh SE/30

$2697 2 Mb RAM FREE!

Choice of keyboard extra. Mac SE has the power to work with large spreadsheets, massive databases.



Macintosh Plus

$1147

Mac Plus—the perfect business solution for the home office.

Color Scanner

The incredible Microtek 300Z - 300 DPI Full color scanner for Macintosh or PC Compatible

$1997

Endless Storage

PLI 45Mb removable drive cartridge system. Add cartridges to add storage. Very Fast.

$997

Mac Portable

- 40 Mb Hard Drive
- 12 hour battery

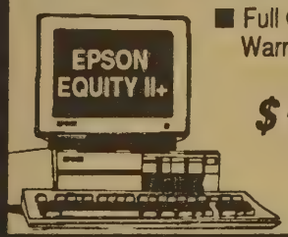
$XXXX

Over Stocked - Call

DISCOUNT PRICING EVERY DAY • GUARANTEED LOW PRICING

EPSON Equity II+

- 80286/12 MHz ■ 30 MB Hard Driv
- 640 RAM, exp. to 15.5 MB
- 1.2 MB 5.25" floppy drive
- Full One Year Warrany



$1347

EPSON Equity 386/20

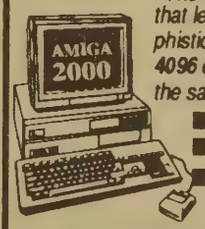
- 80386/20 MHz
- 2Mb RAM, upto 16Mb
- 80 MB Hard Drive
- 9 Expansion Slots
- 1.2 MB 5.25" floppy
- Keylock Switch

$2977

Epson is a Trademark of Epson America, Inc.

THE CREATIVE EDGE

COMMODORE AMIGA **Amiga 2000**



*The **color graphic workstation** that lets you produce **videos** with sophisticated **animated special effects** **4096 colors**, run several programs at the same time, and more.*

- Monitor ■ 40 Mb Hard Drive
- 3 MB RAM ■ 3.5" Drive
- Mouse

$2597

Amiga™ is a registered trademark of Commodore-Amiga, Inc

Let Us Set-up Your Group Discount Employee Purchase Plan

EPSON Printers

LX-810	$193.
LQ-510	Call
FX-850	369.
EPL6000	997.
LQ-1010	497.

Quality 9 pin & 24 pin letter quality printers to fit any computer

HP ScanJet Plus

For Macintosh or IBM Compatible

$1596.

AutoFeed $447.00

HEWLETT PACKARD

LaserJet III - In Stock!

HP® is a registered trademark of Hewlett Packard Inc.

EPSON Equity 386SX

- 80386/16MHz
- 30 MB HD
- 1.2 Mb Floppy
- 1 Year Waranty

$1747

HEWLETT PACKARD HP LaserJet IIP

$949

Regularly $1495.

362 S. La Brea Avenue Los Angeles, CA 90036 213/857-0371

STORE HOURS
Mon-Fri—9-6
Saturday—10-6

818/884-2064 23647 Calabasas Rd Calabasas, CA 91302

Apple® and the Apple Logo are trademarks registered to Apple Computer, Inc. Macintosh™ is a trademark registered to Apple Computer, Inc.

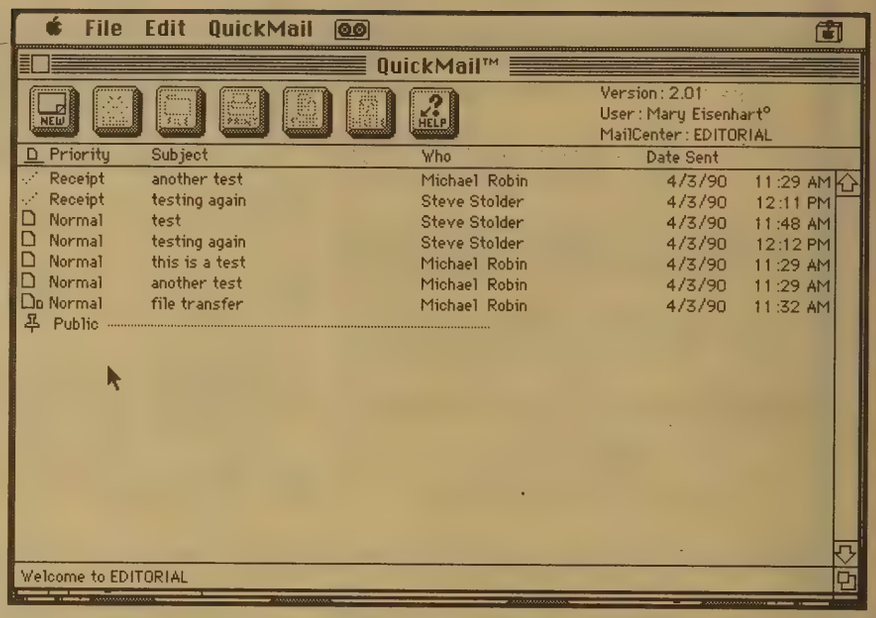
task, and for another, it's a relatively rare occurrence for the three of us to need to work on the same files. If we had a constant need to access the same data, for instance, as our accounting department does, the dedicated server would be a more attractive option. It cannot be overstressed that the type of work you're doing and the way you do it are matters you should consider long and hard *before* you commit yourself to a particular type of network.

Regardless of which configuration you use (and the setup directions will vary slightly according to whether you're using the AppleShare or QM Server options), QuickMail requires that you choose a machine with a hard disk (and preferably at least 2Mb of RAM) as a server for QuickMail, and to designate a user as the custodian of each MailCenter for performing housekeeping tasks. In our case, this was not a rough decision: given a choice between a 1Mb Plus, a 2Mb Plus, and a 4Mb SE/30 with an 80Mb hard disk, we made the SE/30 the server. (Our minimal requirements don't begin to tax the SE/30's performance; it's sitting on my desk and being used pretty constantly, which might become a problem if we had three dozen talkative users instead of three less-talkative ones. In general, CE recommends using the least-busy Mac for a server.)

QuickMail includes an Administrator disk and manual, as well as a serial-numbered User disk and a quantity of user manuals equivalent to the number of licenses you've bought (1, 5, 10 and 50 are the current options). CE proudly notes that there are no counters on the user installation disk or other obnoxious protection schemes; instead, you're allowed to create many user accounts, any one, five, ten, or 50 of whom can be logged on in your MailCenter (workgroup for purposes of receiving mail, essentially) at one time. Excess users have to wait till someone's logged off before they can access QuickMail.

QuickMail's modular approach makes things handy down the line. When your company grows and you need more workstations, just buy another QuickMail package and install more users.

This modular approach makes things handy down the line. When your company grows and you need more workstations, just buy another QuickMail package and install more users.


File Edit QuickMail
QuickMail™
NEW
HELP
Version: 2.01
User: Mary Eisenhart°
MailCenter: EDITORIAL
D Priority Subject Who Date Sent
Receipt another test Michael Robin 4/3/90 11:29 AM
Receipt testing again Steve Stolder 4/3/90 12:11 PM
Normal test Steve Stolder 4/3/90 11:48 AM
Normal testing again Steve Stolder 4/3/90 12:12 PM
Normal this is a test Michael Robin 4/3/90 11:29 AM
Normal another test Michael Robin 4/3/90 11:29 AM
Normal file transfer Michael Robin 4/3/90 11:32 AM
Public
Welcome to EDITORIAL

When you open the QuickMail DA, you're presented with a list of your accumulated messages. Click to read them, or click New to create your own. Note that different types of messages have different icons, and that you can enclose files or request a receipt when your message is read.

INSTALLING QUICKMAIL: ADMINISTRATOR

First, take your QuickMail Administrator disk and User disk and copy them. Put your master copies away and install from the copies. You'll be glad you did when your Mac eats your Administrator disk and you don't have to make tearful phone calls to Iowa at all hours. Make sure the machines you want to install the program on are running at least System 6.0.2; the server must be running 6.0.3 or greater.

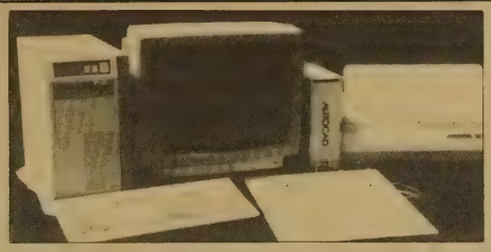
Insert the Administrator disk in your floppy drive, create a new folder called QuickMail Folder on your hard disk, and follow the easy directions (most vital information for installing and administering the network is contained in a 17-page introduction) to copy appropriate files from the floppy into the System and QuickMail folders. Restart your machine.

In the QuickMail folder, open QM Administrator. You'll be presented with a dialog box asking you to create your first Mail Center. (Again, consider design matters—three of us don't require a multiplicity of MailCenters, since each can have up to 100 users, but consider which people are likely to be sending messages to each other most often and plan accordingly.) Give it a name and assign it a password—you'll be repeating this process fairly often, but in this particular case the password is not optional. Be sure to select a non-obvious password and keep it in a safe place—your system will be more secure, and you won't be tearing your hair out in large handfuls when you keep getting the Incorrect Password message. If you forget the password to the MailCenter, you do not have a workaround. What you have is a nerve-racking reconstruction job ahead of you, because you won't be starting from scratch when you develop this problem. Be a good administrator and do not fall into this pit.

You're given the chance to configure various options—among other things, QuickMail will let you post public messages, hold conferences with other users in real time (and with a self-generating transcript!), keep various logs and allow access by modem from outside the network. Different work situations make different options attractive, but if you decide to change something later you can always reconfigure from QM Administrator.

Then you'll be presented with a box with an empty user list. Select **Create...** from the User menu, and enter each user's first name, last

continued on page 96



Customized CADD!

by Victory Systems, Inc.

Take the guesswork out of specifying your CADD system. We're CADD experts, let us install the **CADD system to fit your needs and budget.** We're staffed by **engineers** and are trained in **AutoCAD®** and **AutoSOLID™** applications.

NOW AVAILABLE: 486-BASED CADD SYSTEMS

SEE AUTOCAD®/386 AND AUTOCAD® ON OS/2

TRAINING OFFERED!
With Each AutoCAD Purchase

- Digitizers
- Plotters
- Monitors
- Graphics Boards

NOW at Sale Prices!!

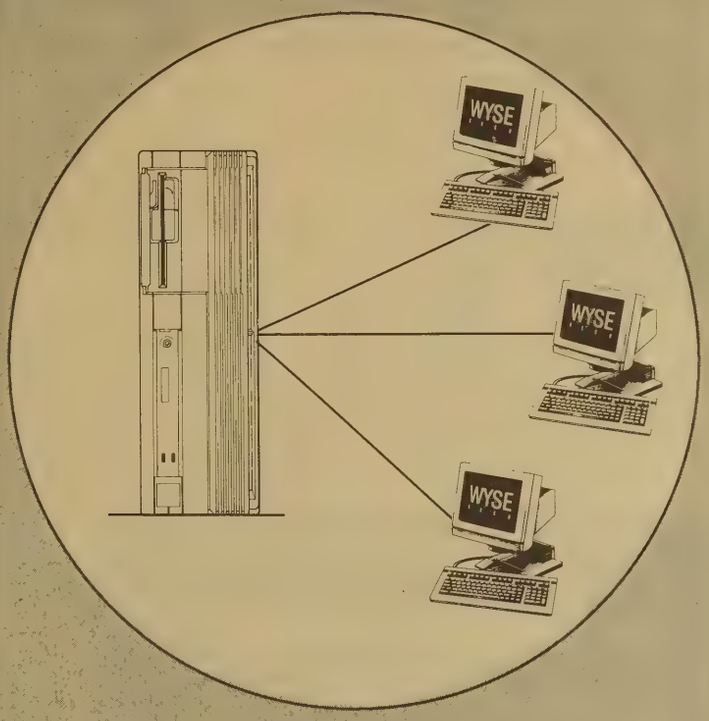
Victory Systems, Inc.
Laguna Hills, CA 92653
(714) 583-9272

Authorized Autodesk Dealer

AutoSolid™ & Animator™ are trademarks of Autodesk, Inc.

AutoCAD is registered in the U.S. Patent and Trademark Office by Autodesk, Inc

YOUR FUTURE IS HERE TODAY



CONSULTATION
INSTALLATION
TRAINING
NETWORKING SET UP
CONTINUAL POST SALES SUPPORT

BENCE

COMPUTER SYSTEMS
SALES · SERVICE · SUPPORT

7801 CANOGA AVE #11
CANOGA PARK, CA
818/716-8200

OFFER EXTENDED

BE YOUR BEST!

WITH A

MACINTOSH

DESKTOP PUBLISHING
for ONLY $296 A MONTH !

- ❑ Macintosh IIcx 5/80
- ❑ 14" Color Monitor/256 Colors
- ❑ High Performance Postscript Laser Printer
- ❑ Aldus Freehand
- ❑ Aldus Pagemaker
- ❑ Keyboard, cabling, power protection

Small Business Specialists

STRATEGY-MACSURGEON

AT&T Building • Irvine Spectrum

714.727.3591

The Portable LAN

BY NANCY COMSTOCK

Thanks to the combined communications and connectivity features built into today's portable computers, which allow them to function on nodes on local area networks when linked via telephone to the home office, users are enjoying unprecedented efficiency in outbound operations.

Field sales representatives have long used portable computers to transmit the day's orders back to the home office, and access inventory and shipping information from the company's LAN or mainframe computer. However, non-sales-oriented companies and government installations are also discovering creative applications for this technology, as the experiences of two customers of my client, Altima Systems, attest.

LAPTOP VENDOR ALTIMA FINDS FAVOR IN GOVERNMENT AND REMOTE FIELD OPERATIONS

HIGH TECH JUSTICE

The US Court of Appeals is fast becoming one of Altima's top volume users by equipping its judges in the southeastern United States with Altima One portable computers for their use both in and out of the courtroom. According to Ward Mundy, director of information services for the US Court of Appeals in Atlanta, the laptops have been a boon to the circuit courts' productivity.

Each judicial office consists of a judge, three law clerks, and two secretaries, each of whom uses computers which are networked together. Through the LAN, they are able to share not only voluminous data files, usually WordPerfect documents, but also peripheral equipment including printers.

Typically in an appeals case, three judges sit on a panel to hear oral arguments, a procedure which frequently involves travel to courts in different cities. This necessitates their being on the road a great deal of the time.

The Altima portables allow the judges to directly access the network of AT-class machines in their own or any other similarly-equipped Court of Appeals office.

"The judges are now able to simply unplug their computer and go," Mundy explains. "They have an office on wheels. And, through the use of Altima's built-in modem, judges can link into other networks on the road, as well as to their home office, just as easily as being there."

Prior to the use of laptops, claims Mundy, things were quite different. "When judges traveled, not much got done. Now the offices can remain productive the entire time the judge is gone."

AUDITS TO GO

In the old days, Citibank auditors were sent to corporate sites for up to two weeks at a time, armed with three or four huge binders filled with their previous year's work, business information, and reference material. Today, they simply carry their Altima One portable computers.

The bank has been able to achieve increased efficiency by automating most of the audit process using Altima Systems' computers in conjunction with PC-based mainframe retrieval and risk-oriented audit software developed by Citibank's Audit Division.

Formerly, auditors would tote large quantities of printouts of client data with them; when they required more information they had to rely on phone calls. Many calls involved countless rounds of phone tag, followed by the wait for Federal Express overnight deliveries of the required documents. After they had gathered their audit information in the field, they'd haul it back in to one of their offices for formulation, evaluation, ranking, and report generation.

Now, using their Altima One portable computers equipped with Arcnet cards, auditors are connected to the Audit Division's local area network and can access and examine corporate information from the bank's mainframe before they travel to the audit site.

The reference material which resides on the local area network databases is selected to coincide with the particular audit site's specific business and product specialties, then loaded into the Altima's built-in hard disk. At any time while the auditor is at a site, additional reference material can be retrieved remotely from the audit division's local area network, using the Altima One's built-in 2400 baud modem. Audit reports are now drafted and revised at the site before final issuance.

Bob Kalipetes, Citibank's vice president of the advanced audit technology group, says, "I searched for nine months for the right solution. We needed a box which was sturdy and portable enough for field use. At the same time, it had to double as a desktop unit with a screen and keyboard good enough for seven or eight hours at a time of continual use. We had to have the full 101-key keyboard. We wanted an architecture which could be leveraged into the future, such as the 286 platform, and we had to have the ability to plug into any network. A 4800 baud modem would have been ideal, but Altima's built-in 2400 baud modem is sufficient.

"Being a cost center versus a profit center for Citibank, we had to have a great price/performance ratio. In addition, the fact that the Altima One shipped with the Kodak Diconix printer was a definite plus. The whole package weighs in at about 19 pounds including the printer, but the auditor is used to carrying that around in paper and reference materials anyway!"

Citibank's audit division maintains Banyan Vines local area networks in New York, Harrison, and Toronto. "We've set up these LANs identically so that the auditors can access any of the networks, either to exchange data or to print remotely on any network printer," says Kalipetes. "Of course, we've designed a high level of security into our systems, but the built-in security feature of the Altima One adds a further layer of protection for us."

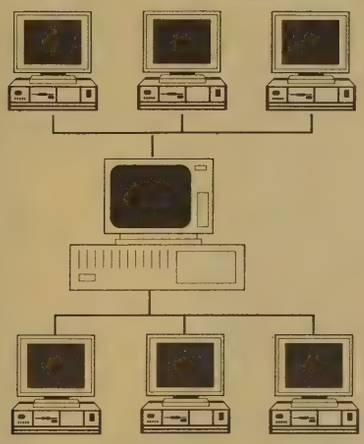
Another benefit has been the auditors' ability to access Citimail, Citibank's electronic mail system, with connections to 95 countries. Says Kalipetes, "It has sure made a difference to information exchange between time zones. All in all, we've greatly increased the efficiency of the entire audit process." ■

Nancy Comstock is president of Comstock Communications, a public relations firm representing Altima Systems, a Concord-based manufacturer of portable computers. Call Altima Systems at (800)356-9990 for information regarding dealers in your area.

THE RIGHT NETWORK CAN MAKE THE DIFFERENCE BETWEEN PROFIT AND LOSS

Choosing the right network for your company is an important decision. It is an investment of time and money. A network that is improperly setup or configured can mean significant down time.

We understand your commitment for your business success. That's why we support you throughout your networking purchase, setup, and training. Our service to you can make the difference between profit and loss with your network.



CONSULTATION
INSTALLATION
TRAINING
NETWORKING SETUP
AFTER SALE SUPPORT

8938 MASON AVE.
CHATSWORTH, CA 91311
FAX (818) 341-4478

(818) 341-0177

THE RIGHT PRODUCTS CAN MAKE YOUR SYSTEM RUN BETTER

UNICOM 386 SX-16

- Intel 80386 Running at 16 MHz
- Deluxe European Style Case
- 1 MB Memory
- 1.2 or 1.44 MB Floppy Drive
- 101 Enhanced Keyboard
- 2 Serial, 1 Parallel, 1 Game Port
- Clock, Calendar
- 1:1 Interleave Floppy & Hard Controller
- Mono Monitor & Card
- 1 Year Warranty

$1250

UNICOM 386 CACHE

- 14" Multisync Sony CPD 1304 (PC Magazine Editor's Choice) w/16 Bit Paradise Chip set, 512K Memory, 1024x768 Resolution VGA Card
- 65 MB Mitsubishi HD
- 4 MB Memory
- 1.2 or 1.44 MB Floppy Drive
- 32K Cache Ram
- Socket for 80387 Math Co-processor (Intel)
- Real Time Clock/CMos Memory w/Battery Backup
- 101 Enhanced Keyboard
- 2 Serial, 1 Parallel, 1 Game Port
- 3.3 or 4.1 Dos Included
- 1 Year Warranty

$4569

MONTHLY SPECIALS 40% OFF

	RET.	SALE
NEC MGE-16 Graphic Card	$1499	$850
Logitech Serial Mouse	$120	$69
LAWN - The Instant Wireless Networking	$499 ea	$399 ea

TOSHIBA LAPTOPS

T 1000 SE
Battery operated PC-Notebook $1059
T 1000
Toshiba's smallest 619
T 1200HB/FB
Light-Small-HD ..... In Stock/1399
T 3100E/40MB
Full Desktop Capabilties 2579
T 1600 20/40MB 2699/2959

MOUSE

Logitech Hi Res PS/2 ..... $95
Logitech Hi Res Bus 75
MicroSoft Mouse w/PB, Bus, Serial 99
MicroSoft Mouse w/Windows 129

MODEM/FAX

Quicktel (100% Hayes Compatible) Sendfax Modem 4800 BPS, 3 Year Warranty ..... Call

Holmes Fax/Modem (for Toshiba Laptop) CALL

EVEREX

Step 286-12 ..... $1471
Step 286-16 1599
Step 386-20 2895
Step 386-25 3049
Step 386-SX 1791

PRINTERS

HP LaserJet Series IID $2570
HP LaserJet Series II 1595
HP LaserJet Series IIP 1095
HP DeskJet Plus 749
HP DeskJet 625

Panasonic KXP 1592 ..... $399
Panasonic KX 1180 199
Panasonic KX 1124 309
Panasonic KX 1191 259

DISK DRIVES/CONTROLLERS

Toshiba 3½" Floppy Disk Drive (720KB) ... $70
Toshiba 3½" Floppy Disk Drive (1.44MB) .. 80

Seagate ST-125 Hard Disk (20MB, 28ms) .245
Seagate ST-138 Hard Disk (30MB, 28ms) .285
Seagate ST-225 Hard Disk (20MB, 65ms) .205
Seagate ST-238 Hard Disk (30MB, 65ms) .215
Seagate ST-251-1 Hard Disk (40MB, 28ms) 345
Seagate ST-4096 Hard Disk (80MB, 28ms) 550

DTC 5150 Hard Disk Controller for XT 60
DTC 5160 Hard Disk Controller for XT/RLL .70
DTC 5280 HD/Floppy Controller for AT 105
DTC 7280 HD/Floppy Controller (1-1) 125
DTC 7287 HD/Floppy Controller RLL (1-1) .145
DTC 5287 HD/Floppy Controller AT/RLL ... 125
WD 1003MM2 HD/FDC AT (2-1) 115

SERVICE & REPAIR AVAILABLE
CALL FOR PRODUCTS NOT LISTED!!!

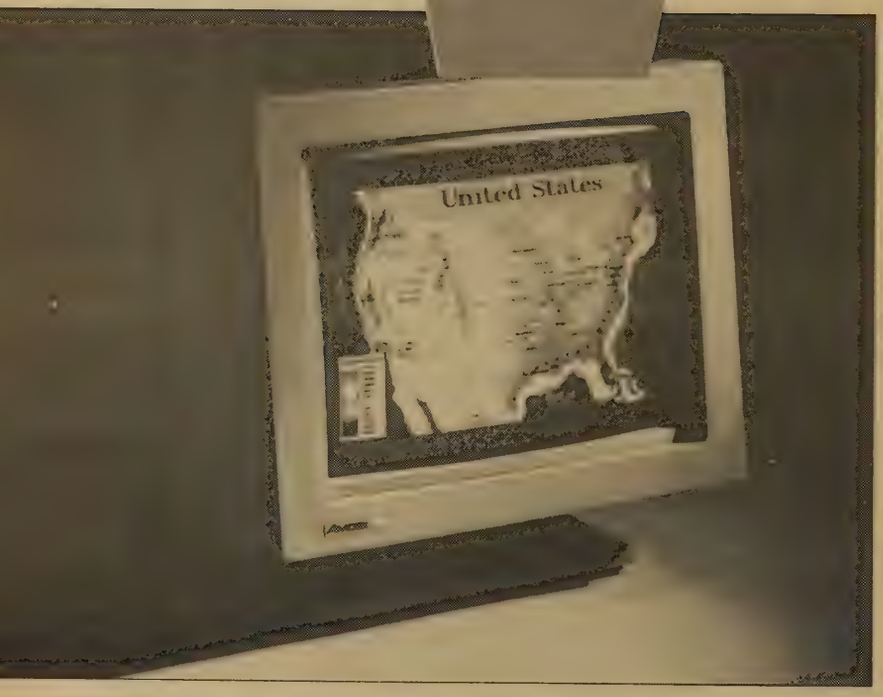
We are geared to service all of Southern California with particularly intensive coverage of the San Fernando Valley.

8938 MASON AVE.
CHATSWORTH, CA 91311
FAX (818) 341-4478

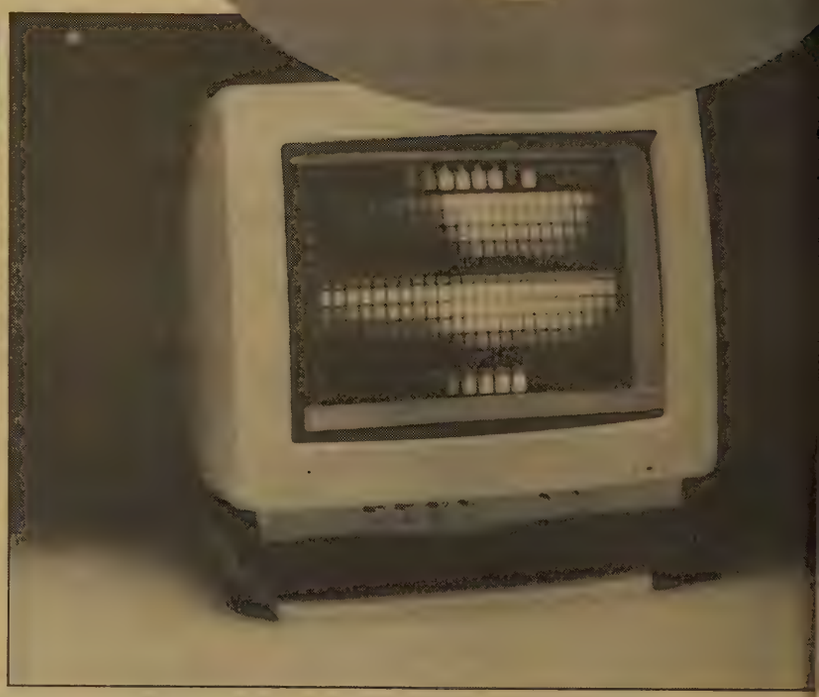
(818) 341-0177

Shopping For VGA

By Jim Meyer and Dan Burleson



Amdek's AM/738 SMARTSCAN high-resolution, color graphics monitor can scan between 34 and 38KHz, which eliminates screen flicker and improves image quality.



Mitsubishi FA 342S 14-inch auto-tracking color monitor.

Have you been considering one of the new high-resolution VGA (Video Graphics Array) monitors? As even the stodgiest word processing programs move toward the graphical interface, VGA is becoming more commonly used. Assess your needs and think about the applications you spend the most time using. Do you spend the majority of your time working with a spreadsheet? Word processing? Desktop publishing? A graphics or paint program?

If you're running graphics, CAD/CAM, desktop publishing, icon-driven menus, or anything that doesn't require a lot of onscreen reading, 1024 x 768-pixel display standards make your screen come alive. Crisp lines, sharp colors, and dynamic images will provide new windows into your work.

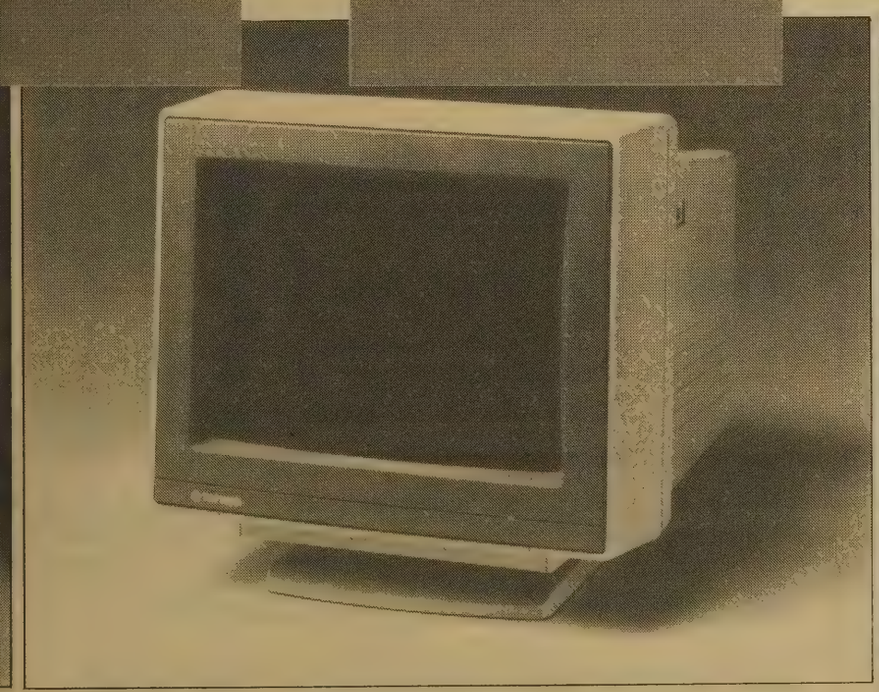
Text is a different matter. If you use words and numbers in high-resolution graphics modes, you might be unhappily surprised at the size of the characters. Don't assume alphanumerics will be the same size as they are on your 600 x 400 monochrome display, only sharper. They will be clear (at least with a good monitor and card) but reduced in size. As a result, more information appears on the screen.

This will be an advantage in some situations. You see extra columns and rows on spreadsheet screens. File directories will display more entries before scrolling off the page. Legible full-page previews will materialize in publishing programs.

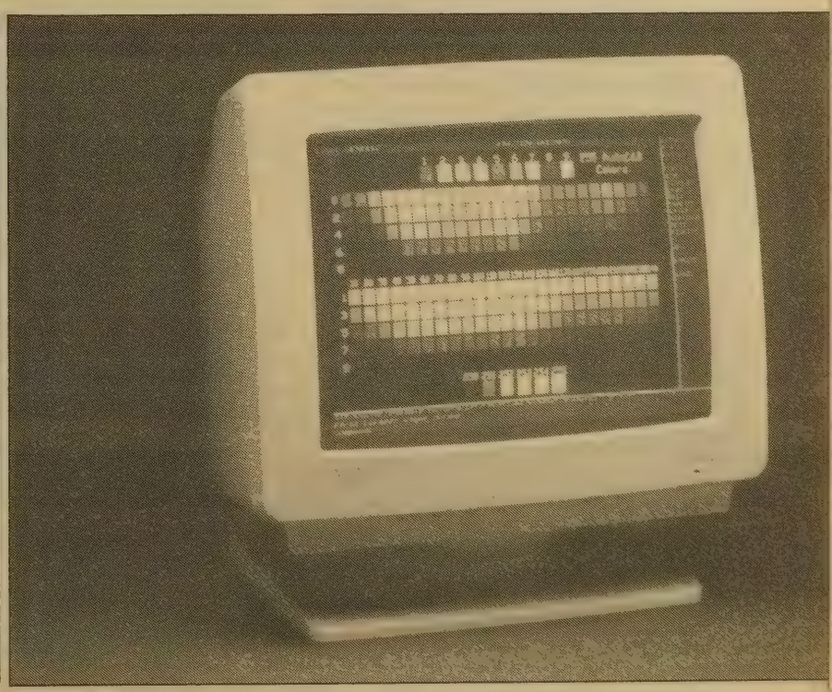
But writing and data entry applications depart immediately for Squint City. The appearance of characters in Microsoft Word 5 and Windows is minute, sort of like the Declaration of Independence printed on the head of a pin. For word processing applications, running VGA monitors at 800 x 600 produces a more readable size.

For this article we looked at six popular monitors—the Amdek AM/738, CTX CSV-3450, Mitsubishi FA3425, NEC MultiSync 3D, Relisys RE-1520, and Tatung CM-1498X—all with the same resolution standard of 1024 x 768. Resolution was our most important consideration, but we also looked at such issues as convergence, image stability, power, compatibility and screen size.

Equally important as the monitor itself is the selection of the VGA card to drive it. We found that different boards produced a wide range of results in the quality of screen display. Choose a card, then use it to compare different monitors. Since there is less than full compatibility among the products of different vendors, be sure the card you choose will drive the monitors you may be considering. All consoles connect to the CPU with a 15-pin video cable.



The Tatung CM-1498X 14" high-resolution Super VGA color monitor with extra-fine def pitch of 0.28mm.



CTX CSV-3450 14" monitor with 1024x768-pixel display.

COMPARISON OF SIX POPULAR VGA MONITORS

Manufacturer/Model	List Price ($)	Dot Pitch (mm)	Screen Size Visual Diag. (inches)	Screen Type	Dimensions W H D (inches)			Weight (lbs)	Horiz. Scan (KHz)	Vert. Scan (Hz)	Power Consump. (Watts)	Controls Horiz. Size	Vert. Size	Horiz. Pos.	Vert. Pos.	Comments * = Recommended
Amdek AM/738	835	.31	13	Tinted	13	14	15	30.0	34.0 - 38.0	50 - 90	84	Y	Y	Y	N	Excellent Glare Reduction Overall Good Values *
CTX CSV-3450	655	.28	13	Etched	14	15	15	28.2	20.0 - 38.0	50 - 90	90	N	Y	Y	Y	Good Color, Bargain Priced
Mitsubishi FA3425K	1175	.28	13	Non-Glare	14	12	15	28.9	15.7 - 35.5	50 - 87	90	Y	Y	Y	Y	Best Documentation, External Composite Inputs
NEC MultiSync® 3D	1049	.28	13	Etched	14	14	16	35.3	15.5 - 38.0	50 - 90	73	Y	Y	Y	Y	Digital Front Controls, Great Street Price, Overall Excellent Value *
Relisys RE-1520	1099	.31	14	Tinted	16	15	16	33.1	30.0 - 50.0	50 - 80	120	Y	Y	N	Y	14" Flat Screen, High Quality, External Composite Inputs *
Tatung CM-1498X	799	.28	13	Tinted	14	12	16	27.6	31.5 - 35.5	80 - 90	70	Y	Y	N	Y	Reasonably Priced, Convergence Problems in Test Unit, Poor Controls

WHAT TO LOOK FOR

Dot pitch, the distance between phosphor dots coating the screen, is a major factor in the crispness of the display. Generally, the closer the dots, the better the image. The six monitors we looked at deliver either .28 or .31 mm dot pitch, respectable quality.

When you're test driving, use a graphics or paint program to create as large a screen of white as you can. Let the monitor run for several minutes and watch for areas of faintly colored shadows blotching areas of the screen. This phenomenon is the result of poor convergence of the red, green, and blue phosphor dots. If they fire precisely, white appears on the screen. If you find a monitor that otherwise works well for you but it has a convergence problem, the vendor may be able to clean it up, since this trouble can be corrected by qualified technicians. We found that the NEC 3D, Relisys RE1520 and Amdek AM/738 all displayed excellent color convergence.

Experiment around the spectrum. We created a primarily cyan screen with a little magenta and noticed a series of lines arrayed like iron filings exposed to a magnetic force. The pattern was distracting on some screens, particularly the NEC and CTX 3450.

Multisync/multiscan monitors are a good investment. Color appears on the screen as the result of electrons being fired from three guns, temporarily exciting the screen phosphors. After finishing one line, the guns move lower and scan the next. When they get to the bottom of the screen, they move to the top and start over. The display is a product of the horizontal and vertical scanning rates of the monitor. The horizontal frequency may vary from 60-70 Hertz (Hz), or cycles per second. As video standards and products continue to improve, the flexibility of a monitor that can accommodate changing requirements is worth the current price difference.

Image stability is also important. The constant refreshing of symbols on the screen require high precision components. Poor monitors display rapid jiggling movement known as jitter. Better-manufactured units confine character movement to a minimum. The Relisys and Amdek models were noteworthy in displaying almost no motion in the screen image. (Be sure there are no other monitors, fluorescent fixtures or electronic equipment operating in close proximity—less than a foot—to the test unit. Electrical disturbances may result from these devices, and distortions will appear on the viewing screen).

When testing a monitor's performance, jump around from application to application. Carefully adjust the screen aspect, the relationship between vertical height and horizontal width. Paint or graphics programs allow you to set a perfect circle or square on the screen. If the aspect ratio needs adjustment, a circle will appear oval and a square looks rectangular. Calibrate the H- and V- size controls so these images assume a correct shape.

After you exit a program, check the margins of text. Has any text disappeared under the edge of the screen? If so, adjust the positioning controls, run another program, exit, then see if the text has jumped off the screen again.

All the units we tested showed remarkable chromatic quality. Every monitor displayed an unlimited palette of bright and vivid colors in analog input.

Turn test units to face a bright source of light to see how they deal with glare. Glare can be a real problem, and vendors usually address it by etching the glass or coating the screen. We found that the Amdek, Mitsubishi and NEC screens reflected the least glare, but all six units were acceptable.

At 1024 x 768, screen size is critical, with 13 visual inches being the minimum adequate. Tatung and Amdek claim a 14" diagonal screen size, and the Relisys (which has the added advantage of having the only flat screen we tested) claims 15". However, we found their actual viewing areas an inch shorter than claimed.

ONLY YOU KNOW WHAT'S RIGHT FOR YOU

What matters is how the screen looks and feels to you. Run a test monitor at least 15 consecutive minutes so it assumes normal operating temperatures. Some defects don't appear until the display warms up.

Since a certain amount of fiddling is inevitable with color displays, it's nice that manufacturers finally put most of the controls at the front or side of the housing. The Amdek 738 controls brightness and contrast with unique and responsive rollerballs on the side of the cabinet. The NEC provides a nice touch—incremental adjustments controlled by digital push buttons directly below the screen.

When you test displays, be sure to bring your software or request a demonstration using the programs you use or intend to use. Make sure the driver of the graphic card you select supports your software.

Eyes are valuable. Text-based programs may be better run at lower resolutions and larger sizes. But the true beauty of high-res VGA comes through in graphic modes. So trade the Bahamas vacation and the luggage for two weeks in the Sierras and plunk the difference down on the best monitor available. In the long run you'll probably save a fortune in optometry bills.

Monitor selection is ultimately a personal decision. By going through the process of running different software applications on a number of monitors, you will begin to appreciate how technical specifications translate to the screen. Your choice will probably be as much a matter of feeling as of formula, but unless you're feeling particularly lucky, don't take shortcuts in the evaluation process. ■

We found that different boards produced a wide range of results in the quality of screen display. Choose a card, then use it to compare different monitors. Be sure the card you choose will drive the monitors you may be considering.

Sensational IBM Software SALE

$2.39 Per Disk 10 or More

$2.89 Per Disk Less than 10

Great Public Domain and Shareware Programs • Best Selections • Latest Updates
Fully Tested – Virus Free • Free Technical Support • Fast, Fast Delivery

Featuring: MORE...MORE...MORE.....PROGRAMS PER DISK

UTILITIES

VIRUSCAN (403) NEW! Best, easiest virus protection. Always updated to catch new virus.
NEWSPACE (410) NEW! Was commercial. Terrific automatic hard disk space saver.
DBS-KAT (425) NEW! Great disk cataloging system w/no data entry. 384K, DOS 3.0+.
SCREEN CAPTURE (445) NEW! Capture screens in CGA, EGA, VGA & save to disk.
PC-BROWSE (492) NEW! Incredible file & text search from makers of PC-Write. Hypertext, Cut & Paste. Requires 640K.
LIST (417) Read text files on screen. All-time best! Scroll forwards & backwards.
BATCH FILE MENUING (419) Easily add professional menus to batch files.
POINT-SHOOT BACKUP/RESTORE (401) Superior hard disk backup. CGA or EGA.
QUICKCACHE (443, 444) (2 disks) Disk caching speeds up your PC. Best ever!
BAKER'S DOZEN (406) Powerful package of 14 utilities from Jim Button. Top rated.
CGA SIMULATOR (433) Run most CGA programs on Hercules compatible monochrome cards.
HARD DISK UTILITIES (437) Very useful set of hard disk utilities.
BEST BATCH UTILITIES (473) 25 programs to put power in your batch files.
ALT (412) New! Powerhouse! Combines Sidekick, Superkey, Software Carousel, Menuing, and more. Needs hard disk.

MENUS and DESKTOP

POWER DESK (606) NEW! Was commercial. Superb desktop manager and complete office system.
POWER MENU (702) Excellent, easy menuing program. Needs hard disk.
HOMEBASE (601-602) (2 disks) Desktop organizer puts Sidekick to shame. PC-Magazine software pick of the year.
TREEVIEW (706) New! Our favorite DOS command shell with pulldown menus.

WORD PROCESSING

HELPPERFECT (801) for 5.0, **(802)** for 4.1 & 4.2. NEW! Incredible must-have WordPerfect utility. Pull-down menus w/70 commands.
WORDPERFECT 5.0 TOOLS (841) ASCII to WP5 format converter plus other super utilities to improve performance.
PC-WRITE 3.03 (809-811) (3 disks) New version! Top rated w/spell checker.
WORDPERFECT CLIPART (843, 844) (2 disks) Over 180 great graphics.
PRO-SCRIBE (822) New! Really improves the impact & clarity of your writing.
WORDPERFECT MACROS (831) for 5.0, **(837)** for 4.2. Over 70 great macros & templates.

PRINTING

AMAZING LABELS (1647) NEW! Create exciting graphic address labels.
FORM DESIGNER (112) Easy, powerful program creates great custom forms.
LETTERHEADS PLUS (132) Design/print custom letterheads, envelopes, labels to Epson/IBM compatible printers.
ON-SIDE (121) New! Print sideways with custom fonts. Menu-driven.
CITYDESK (123) Desktop publishing for 2 column newsletters.
MR. LABEL (124) Most versatile & powerful label printing program.
ADDRESS-O-MATIC (127) Grabs names and addresses from letters and automatically prints envelopes.
IMAGEPRINT (128) Letter quality printing on a 9 pin dot matrix printer.
BANNER MAKER (130) Create signs and banners with multiple fonts and styles.

GAMES

WORDS*WORDS (200) NEW! Word puzzle game uses 6,000 words. Challenging enough for adults.
BATTLE GROUND (286) NEW! Terrific strategic war game. Great graphics. Requires CGA.
FORD SIMULATOR II (280, 281) (2 disks) NEW! Exciting new driving simulator from Ford Motor Co.
FACING THE EMPIRE (290) NEW! Great intergalactic adventure game.
RETURN TO KROZ (291) NEW! Unique arcade-adventure game. Sequel to prize-winning Kingdom of Kroz.
PINBALL ART (295) NEW! Fast-paced high-quality pinball games. Requires CGA.
CRIME LAB (279) Great, unique graphic murder mystery game. Needs CGA or EGA.
CAPTAIN COMIC (260) Commercial quality arcade game. Absolute tops! EGA or VGA.
DRACULA IN LONDON (271) Super graphics adventure game. Great fun. CGA or EGA.
NINJA (201) New! Commercial quality karate arcade game. Superb graphics. CGA, EGA.
3-D CHESS (205) Superb 3-D game. Loaded with options. Use with any graphics card.
PC-RAILROAD (210) Trains run on ready-made routes or design your own. You have total control. Requires CGA.
CARD GAMES (214) Draw Poker, Hearts, Canasta and Bridge.
ARCADE GAMES #5 (220) Rockets, Snake, Xonix, Nemon, Spacewar. Needs CGA.
FAVORITE GAMES (221) Pango, Qbert, Frogger, Packman, 3-Demon, Babies. CGA.
ADVENTURE GAMES #1 (228) Sam Spade, Castle Adventure, Pleasure Dome.
GAMBLING GAMES (229) Blackjack, Poker, Roulette, Craps. CGA.
BOARD GAMES #1 (230) Monopoly and Risk. Requires CGA.
MONOCHROME ARCADE GAMES (243) Horserace, Beast, Skiing, Fire Fighter.
MAJOR LEAGUE BASEBALL (203) Super baseball game. Neat graphics. CGA.
BOARD GAMES #2 (231) Checkers, Chess, Dominoes, Backgammon. Needs CGA.
BOARD GAMES #3 (245) Scrabble, Concentration, Bye Bye Boris, Seek & Sink. Requires color monitor.
STRATEGIC WAR GAMES (226) War on the Sea, Tank, African Desert Campaign.
KINGDOM OF KROZ (244) Unique arcade-adventure game. National prize winner.
ARCADE SPORTS GAMES (223) PC-Pool, PC-Bowl, Archery. Requires CGA or EGA.
ARCADE GAMES #1 (216) Spiders, Tank Wars, Disk Crash. Requires CGA.
ARCADE GAMES #3 (218) Round42, Willy the Worm, Sopwith. Requires CGA.
EGA ARCADE GAMES #1 (251) Aldo, Ega-Breakout, Egaroids. Requires EGA.
EGA ARCADE GAMES #2 (252) Snarfs and Ega-Star Trek. Requires EGA.
EGA FOOTBALL (257) You control the action. Plays like real football game. EGA.
EGA GOLF (250) 18 holes. Best scenery. EGA.

HOUSEHOLD

A>RECIPES (1831) NEW! Computer chef with loads of delicious recipes.
PC-BARTENDER (1823) Professionally mix almost any drink.
GARDENER'S ASSISTANT (1809) Plan your garden in every detail.
VIDEO LIBRARIAN (1812) Catalogs your video tape library. Menu-driven.
SHOPPERS ASSISTANT (1816) Easy grocery shopping and coupon filer.
ROLODEX (502) Like ROLODEX. Rotary index card file system with search, label printing, and more.

BUSINESS & FINANCE

POSTAL CONSULTANT (8934) NEW! Computerized U.S. Postal guide. Covers all mailing rules.
FREIGHT + (8904, 8905) (2 disks) NEW! Top rated commercial UPS shipping system. Complete, fully functional. Requires DOS 3.0+, 380K, hard disk.
FINANCE MANAGER II (8917-8922) (6 disks) Best, complete business accounting. G/L, A/P, A/R, Payroll. 2 floppies or hard disk.
ACTIVE LIFE (509, 510) (2 disks) NEW! Best ever appointment/scheduling program. Unique, powerful features in a graphic interface. Requires graphics monitor, 512K, hard disk.
MASS APPEAL (1963) NEW! Complete powerful mail list manager. Requires 512K, 2 floppies or hard disk.
YEAR PLANNER (508) Powerful organizer prints wall calendars. Needs 520K.
AREA CODE FINDER (1962) Quickly finds US & foreign area codes.
RENTALS (1951) Fast, powerful property management. Menu-driven, easy to use. Requires 420K, 2 floppies or hard disk.
ZIP CODE FINDER (1900) New! Computerized Zip code book. Lightening fast search.
FASTBUCKS (1903) Fast, easy, complete home finance package. Requires graphics card.
FLODRAW (1904-1905) (2 disks) Total flowcharting system. CGA or EGA, 320K.
SOLVE-IT! (1919) 29 menu-driven financial calculations.
EXPRESS CHECK (1922) Great check book mgr. Menu-driven, prints checks & reports.
EASY PROJECT (1932) Total project manager. Gantt charts, reports.
FONE (1954) New! Price your phone calls while you're on the line & save money.
BUSINESS FORM LETTERS (1936) 100 common business letters. Fill in the blanks.

DATABASE

dLITE (1031) Amazing dBASE multi-utility incl. cut & paste, and much more.
FILE EXPRESS 4.xx (1002-1003) (2 disks) Easy, powerful database. PC-Magazine said it "performs like a thoroughbred."
PC-FILE+ 2.0 (1009-1011) (3 disks) New version. Jim Button's relational database masterpiece.
dPROG (1022) Fantastic dBASE III auto-programmer writes all the code for you.
WAMPUM (1006, 1007) (2 disks) Superb, full-featured dBASE III clone. Requires 512K, hard disk.
dFLIPPER (1025) New! Directly edit dBASE & compatible files from DOS.

PROGRAMMING

A86 and D86 (1403-1404) (2 disks) Finest macro assembler & debugger. Lightening fast. Rave reviews.
EBL & OPAL (1407) Two fantastic batch language processors. Super-charge your batch files.
ADVBAS (1413) The best Basic programming aid. Advanced function library, windows.
SCREEN DESIGNER (1431) New! Exciting feature-packed screen designer for batch files & most programming languages. Needs 384K.

COMMUNICATIONS

PRIVATE ACCESS (1718) NEW! Connects PCs to answering and FAX machines, and pagers.
PROCOMM (1700-1701) (2 disks) Newest. All features, menu-driven. Top rated.
TELEDISK (1713) NEW! Converts entire diskette into a compressed file for faster transmission.

GRAPHICS

PRINTMASTER GRAPHICS #2 (1645) NEW! 600 great pictures for PrintMaster.
PRINT SHOP GRAPHICS #2 (1646) NEW! 600 clever pictures for Print Shop.
ICONVERT (1600) NEW! Powerful graphics file converter. Converts between 16 different formats. Needs graphics, 2 floppies or hard disk.
PC-KEY DRAW (1607-1609) (3 disks) Powerful drawing/CAD program with clip art. CGA, EGA or Hercules with CGA emulator.
FINGER PAINT (1620) Like PC-Paint brush. Requires graphics card.
VGA PAINT (1622) New! Graphics/drawing in 248 colors. Requires VGA, 450K.
PRINTMASTER GRAPHICS (1602, 1603) (2 disks) 1,080 great Printmaster graphics
PRINT SHOP GRAPHICS (1663, 1664) (2 disks) 1,080 graphics for Print Shop.

EDUCATION & TUTORIALS

TOTAL RECALL (327) NEW! Helps you memorize any subject. Requires 448K.
TUFF-SPELL (359) NEW! Really helps you master commonly misspelled words.
AMERICAN STATES (338, 339) (2 disks) NEW! Great U.S. States education program.
TOUCH TYPE TUTOR (300) NEW! Superb interactive typing instructor.
WORDPERFECT LEARNING SYSTEM (353, 354) for 4.2. **(355, 356)** for 5.0.
COMPUTER TUTOR (302) Complete interactive DOS and computer tutorial.
EASY DOS (305) Two great programs make using DOS very easy.

SPREADSHEET

AS EASY AS 4.0 (902) NEW! Great Lotus 123 clone. Latest with 256x8,192 grid. Does almost every Lotus function.
QUBECALC (903) Unique, powerful 3-D spreadsheet. View data as never before.
LOTUS TEMPLATES (907) Ready to run. Requires Lotus 123.
LOTUS MACROS (908) Saves loads of time. Requires Lotus 123.
123 POWER WORKSHEETS (911-912) (2 disks) 13 powerful worksheets for Lotus 123.
PC-CALC+ (914-916) (3 disks) Jim Button's latest. Powerful and easy to use.

CREATIVITY

CREATIVITY PACKAGE (3000-3002) (3 disks) Unique, 3-phase package. Computer brainstorming unleashes your creativity.
IDEA TREE (3003) Unique thinking tool & info manager. Graphic display of ideas. Tops!

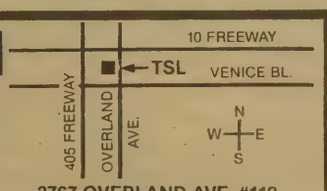
MISCELLANEOUS

TRIP PLANNER (1305) NEW! Fantastic computerized U.S. roadchart. Finds shortest routes, much more!
ELECTRONIC ALAMANAC (2700) NEW! Hundreds of traditional almanac features.
JORJ (331, 332) (2 disks) NEW! Extraordinary phonetic English dictionary. Powerful, unique features. Requires hard disk.
MICRO WORLD DATA BANK (2608-2612) (5 disks) Ultra detailed world mapping. Produced by the CIA. Needs CGA or EGA.
PIANOMAN 4.0 (2202) Play and compose music. New update is better than ever.
WORLD (2600) Stunning! Feature-packed world map with zoom. Needs CGA or EGA.
ASTROLOGY 9.5 (2701) Complete, accurate chart calculation.
LOTTO BUSTER (2130) Lottery program that really works on any pick-6 or pick-7 lottery.
WISDOM OF THE AGES (1216-1218) (3 disks) New! 6500 quotes on 81 subjects from history's greatest minds. Inspiration for thought & writing.

WALK-IN SPECIAL

Visit us at our freeway-close location – and select three FREE disks when you purchase 10 or more.

WALK-IN HOURS: 8:30AM – 5:30PM
MON. – FRI.
SAT: 9:30AM – 5:30PM



3767 OVERLAND AVE. #112
LOS ANGELES, CA 90034
(4 Doors N. of Venice Blvd.)

CIRCLE DISK NUMBERS DESIRED:

Number of disks x $2.89 each =
($2.39 each 10 or more disks)
3.5" disks - add $1 ea. = _____
CA residents add 6.75% sales tax = _____
Shipping and handling = $3.50
Pay for Each Disk in Multiple Disk Sets
Total = _____

We accept MC/VISA, Check, Money Order.
COD (Add $4 for COD).

Name _____
Address _____
City/State/Zip _____
VISA/MC # _____
Exp. Date _____

The Software Labs MT4/30
3767 Overland Ave., #112, Los Angeles, CA 90034
(213) 559-5456 FAX (213) 559-3405
CALL OR WRITE FOR FREE CATALOG

CREATIVE TOOLS

The Wait Is Over

The Next Generation Of Amigas

BY MATTHEW LEEDS

AMIGA

On April 24th, Commodore Business Machines rolled out the latest addition to the Amiga product line, the Amiga 3000. They also introduced a new version of AmigaDOS and a new support program, brought the Amiga 500 into the mass market, introduced an interactive multimedia authoring program, and previewed several new peripherals. What you are about to read is an overview of what was contained in that rollout, based on information provided prior to the event.

THE AMIGA 3000

The A3000 is a 68030-based machine, with either a 16MHz or 25MHz CPU, backed up with a 68881 or 68882 math co-processor. All A3000's will ship with a hard disk drive, either a 40Mb or 100Mb version. The bus is now a full 32 bits, with hard disk support built into the motherboard. The equivalent of a flicker fixer is also built into the system, offering flicker-free displays in all modes.

The physical design of the A3000 is much different from that of the A2000. It offers a lower profile and has a smaller footprint. The power switch has been moved to the front, and the keyboard and mouse ports have been moved to the right side. The ports at the back of the machine have been changed, with the addition of a VGA-equivalent video port and a SCSI port.

Inside the machine there have also been changes. The expansion slots are now parallel to the top of the machine instead of perpendicular, and they have been reduced in number to four, with the video slot in-line with one of the expansion slots and two Amiga-bus slots in-line with AT bus slots. A CPU expansion connector with processor takeover capability is also provided for 68040 or other upgrades. The new Enhanced Chip Set (ECS) is installed, along with a new Agnus that supports up to 2Mb of chip RAM. The motherboard has room for 4Mb of 256X4 RAM chips or 16Mb of 1X4 RAM chips.

The new 32-bit bus provides extremely fast access to chip and fast RAM, system ROM, the SCSI DMA controller, and, through a new expansion card format (Zorro III), the expansion bus slots. The new ECS supports several new display modes including a 1280-pixel-wide SuperHires mode.

In addition to the new ECS, several new gate arrays are used. Enhanced versions of Gary and Buster provide address decoding and DMA arbitration respectively. The Super DMAC is the DMA controller for the SCSI bus interface, Ramsey provides control over the on-board fast RAM, and Amber provides the control logic for the display enhancer.

The new Zorro III expansion card standard provides backward compatibility with Zorro II cards while supplying 32-bit address and data path access to new expansion devices. This allows for the creation of faster and more powerful peripherals and eliminates the 8Mb expansion space limit. Addressing is now in the multi-gigabyte range, which should suffice for the next few years.

The 5.25" drive expansion bay has been eliminated. A total of three 3.5" devices can be installed in an A3000. Since they all come with a single floppy and a single hard drive, this translates into a single vacant drive bay.

I've had the opportunity to use an A3000 for a few days. My first impression is that it is fast—very fast. My second impression is that Commodore is going to sell a lot of A3000's, and that the A2500/30 is now an obsolete machine. Here's why: the 16MHz A3000 with 40Mb hard drive has a list price of $3,299, the 25MHz version with the same drive is priced at $3,995. An A2500/30 with a 40Mb hard drive is priced at $4,699. Which would you buy?

The A3000 ships with the newest version of AmigaDOS, V2.0. There are many changes in this latest version, including new standard colors, massive changes to Workbench, AREXX as standard, a completely revamped Preferences, and new commands. In the coming months, I'll go into greater detail on the A3000 and V2.0 of AmigaDOS.

A3000 owners will be able to run either V2.0 or V1.3 on their machines. V2.0 ROMs will be installed, but by holding down both mouse buttons while powering up the machine, the user can access a special menu that lets a file-based version of V1.3 Kickstart be loaded from the hard disk. Since the 68030 has a built-in MMU, once V1.3 Kickstart has loaded, its memory can be protected and V1.3 Workbench can then be loaded. This will come in handy, as some programs may need to be revised to function correctly under V2.0.

A2000 owners will be able to upgrade to V2.0. The price will be around $100 plus dealer installation charges, but a discounted upgrade plan will be in effect for 60 days once the upgrade kits become available. Commodore does not plan to offer an upgrade path for A500 owners. It is also not clear at this point whether Commodore will provide some means of switching between V1.3 and V2.0 for A2000 owners.

Commodore is positioning the Amiga computer as the premier multimedia platform, and will be introducing additional new products to support that position.

OTHER ANNOUNCEMENTS

To complement the A3000, Commodore announced the A1950, a multisync monitor that supports the various display modes of the A3000. Pricing was not available at press time.

All Amiga products and peripherals will now have a one-year parts and labor warranty, retroactive to the first of the year.

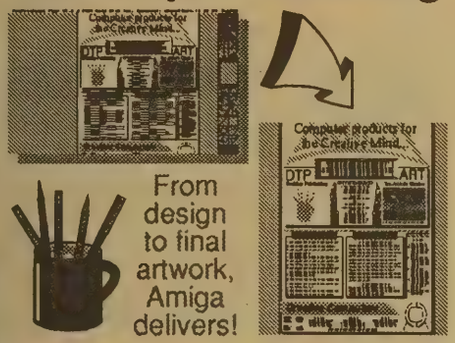
The A500 is being offered in two new packages. The first, targeted at the consumer mass

Copyright © 1990. All rights reserved. *Matthew Leeds has been involved in the high tech field since he blew up his bedroom playing with a children's chemistry kit. He has been using Commodore computers since 1982 and has a strong interest in photography, video, graphics, and related fields.*

Computer products for the Creative Mind...

Wherever your creative mind takes you, the Amiga and Creative Computers can help you get there! Flexible, powerful, yet affordable, the Amiga can help you realize your potential and capture your imagination. Come in to one of our three locations and find out why the Amiga is the next personal computer revolution!

DTP
Desktop Publishing

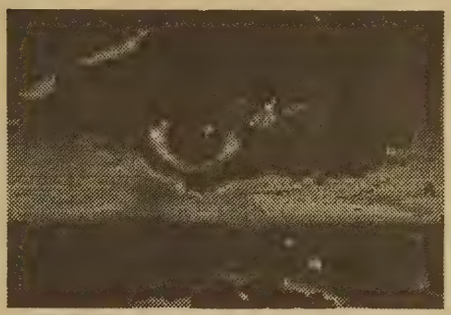


From design to final artwork, Amiga delivers!

SPECIFICATIONS:

4096 colors on screen
4-voice stereo sound
maximum resolution: 768x480
16/32 bit 68000 @ 7.16 MHz
3 co-processors
optional full IBM PC/XT compatibility
true multitasking operating system
3.5" 880K disk drive
up to 9 MB of RAM

ART
The Artist's Choice



Actual image created on the Amiga

Macintosh is a trademark of Apple Computer, Inc. IBM is a trademark of International Business Machines, Inc. Amiga is a trademark of Commodore-Amiga, Inc.

SOFTWARE SPECIALS

QuasarSound **$ 59.95**
Digital sampling/editing software for all Amigas. Includes unique "Play-Disk" sampling-to-disk system.

Professional Page 1.3 **$199.00**
Superb page layout and desktop publishing software. Now with Compugraphic fonts!

Deluxe Paint III **$ 99.95**
Professional-quality paint and animation program for the Amiga.

Digi-Paint 3 **$ 64.95**
4096 color paint program with fantastic special effects and tools!

World Atlas **$ 39.95**
Discover fun facts about the world's culture!

HARDWARE SPECIALS

Amiga Accelerator specials:

GVP 68030 w/4 or 8 megs of 32-bit RAM
Give your A2000 computer mini-computer performance at a microcomputer price. Up to 30MHz, includes 68882. **Call for prices.**

CSA Fasttrack+Dragstrip **$1295**
14Mhz 68020 board for Amiga 2000 w/68881 & room for 16MB of RAM. Regularly $2495!

CSA Midget Racer **$349**
68020 board for Amiga 500, 1000, and 2000. Designed for cost-effectiveness without sacrificing performance.

Other hardware specials:

SupraRAM 2/8 board **$399**
2 megabytes of RAM expandable to 8 on a single card! For Amiga 2000.

Why buy from Creative Computers?

- **We're the largest dealer of Amiga products in the world!**
- **We have the best Amiga sales and service staff anywhere!**
- **We offer more than 1300 items for the Amiga, and the list is growing.**
- **We offer the lowest prices on both hardware and software.**
- **We offer complete financing!**

Creative Computers

VISA MasterCard Card DISCOVER

South Bay:
4453 Redondo Beach Blvd.
Lawndale, CA 90260
phone: (213) 542-2292

Westside:
318 Wilshire Blvd.
Santa Monica, CA 90401
phone: (213) 394-7779

Ventura:
2112 East Thompson Dr.
Ventura, CA 93001
phone: (805) 652-0325

FAX: (213) 214-0932 BBS: (213) 394-5988

market, will include a 512K A500, Textcraft Plus, Tetris, Where in the World Is Carmen Sandiego?, Microsoft BASIC, and an RF/composite encoder. The second, targeted at the professional market (read computer dealers), will include a 1Mb A500 with Commodore's new multimedia authoring system, AmigaVision. Both versions will have a suggested list price of $799.

A new support program is also included with the A500. An 800 number will be provided with the machines for customer support. Should the support personnel decide that the machine needs servicing, they will supply the customer with a return authorization number and shipping address. The customer will write this information on a mailing label, stick the label on the box the A500 came in, and the next day Federal Express will pick up the defective A500. As soon as it is repaired, Federal Express will ship it back; Commodore pays the shipping both ways. This is a radical approach to customer support, and it speaks very highly of Commodore's faith in the quality of its manufacturing.

Commodore is positioning the Amiga computer as the premier multimedia platform, and will be introducing additional new products to support that position.

The version of Microsoft BASIC included with the consumer A500 is an upgrade from the current version. Microsoft has fixed the bugs that have plagued its current release, and in fact Commodore will market the new version as a standalone product for those customers who do not receive it bundled with their machines (A500 Pro, A2000, A3000).

BASIC is being replaced with AmigaVision, a multimedia iconic authoring system that Commodore sees as the natural companion to the Amiga. AmigaVision takes full advantage of all of the Amiga's features, and supports text, graphics, animations, music and sound, laser disc players, and touch screens. Some may compare AmigaVision to HyperCard, but they are very different types of products.

Over the next few months I'll take a look at the A3000, AmigaDOS V2.0, and AmigaVision in greater detail. Commodore is positioning the Amiga computer as the premier multimedia platform, and will be introducing additional new products to support that position. Commodore is kicking off a ten-week advertising campaign to let the world know the Amiga is here to stay. ■

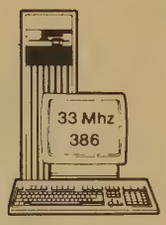
If it comes from CSI it's got service written all over it!

Whether you are considering one computer or 100 you can feel secure in buying from CSI. You are assured of getting a complete, fully loaded system for the same price as other stripped down models. The standards of your new computer will be second to none, and the BEST VALUE in the industry. CSI's commitment to you won't end with offering you exceptional systems at incredible prices. LIFETIME free support and NO-CHARGE evaluations are always included at CSI. You now have a friend in the business – CSI.

COMPLETE 286 & 386 COMPUTERS

12Mhz 286 VGA
- 2MB Memory
- 1.2MB 5¼" Floppy
- 1.44MB 3½" Floppy
- 65MB 28ms Drive
- 16-Bit VGA with 512K
- 14" 1024 x 768 Color Monitor
- 1 Parallel and 2 Serial Ports
- 101-Key Keyboard
- MS-DOS 3.3 or 4.01

$1995.



25Mhz 386-Cache VGA
- 2MB Memory
- 64K Cache Memory
- 1.2MB 5¼" Floppy
- 1.44MB 3½" Floppy
- 150MB 17ms ESDI Drive
- 16-Bit VGA with 512K
- 14" 1024 x 768 Color Monitor
- 1 Parallel and 2 Serial Ports
- 101-Key Keyboard
- MS-DOS 3.3 or 4.01

$3695.

Call for configuration estimates • 100% interest-free financing

16Mhz 386SX VGA
- 2MB Memory
- 1.2MB 5¼" Floppy
- 1.44MB 3½" Floppy
- 65MB 28ms Drive
- 16-Bit VGA with 512K
- 14" 1024 x 768 Color Monitor
- 1 Parallel and 2 Serial Ports
- 101-Key Keyboard
- MS-DOS 3.3 or 4.01

$2195.

25Mhz 386 VGA
- 2MB Memory
- 1.2MB 5¼" Floppy
- 1.44MB 3½" Floppy
- 65MB 28ms Drive
- 16-Bit VGA with 512K
- 14" 1024 x 768 Color Monitor
- 1 Parallel and 2 Serial Ports
- 101-Key Keyboard
- MS-DOS 3.3 or 4.01

$2695.

33Mhz 386-Cache VGA
- 4MB Memory
- 64K Cache Memory
- 1.2MB 5¼" Floppy
- 1.44MB 3½" Floppy
- 150MB 17ms ESDI Drive
- 16-Bit VGA with 512K
- 14" 1024 x 768 Color Monitor
- 1 Parallel and 2 Serial Ports
- 101-Key Keyboard
- MS-DOS 3.3 or 4.01

$4195.

AST® Tandon® HEWLETT® PACKARD® EVEREX® Mitsubishi®

COMPUTER SYSTEM INTEGRATORS

COMPUTERS • TELECOMMUNICATIONS • SOFTWARE

15012 Redhill Ave., Suite B • Tustin, CA 92680

(714) 259-8933

MICROTIMES CLASSIFIEDS WORK!

1800 N. HIGHLAND, Ste. 506
HOLLYWOOD, CA 90028
(213) 467-7878

HP LaserJet IIP/III $959/$1549 | COMPAQ PORTABLE 386 - 100 MB $4799 | Macintosh SE 2Dr/20Mb 1639/1929 | AST PREMIUM 286 from $999 | COMPAQ LTE-286 20MB $2999

"LA'S LEADING COMPUTER STORES"

LA COMPUTER CENTER

WEST L.A. (213) 478-0768
12002 PICO BLVD.
(East of Bundy off 10 & 405 FWY)

SOUTH BAY (213) 542-3501
17013 HAWTHORNE BLVD
(Off 405 & 91 FWY)

ORANGE COUNTY (714) 261-7878
17777 D. MAIN ST.
(Off 405 & MacArthur - Irvine)

L.A. CORPORATE PURCHASING HEADQUARTERS

HYUNDAI

$1069
SUPER 386SX

80386SX ● 16 MHz ● 1MB RAM ● 1.2 MB 5¼" disk drive ● MS-DOS 3.3 w/GW-BASIC ● 18 month warranty

HYUNDAI 286-E
12MHz - 640K w/monitor & card
20 Mb HD
.....$1069

COMPAQ

LTE 20 Mb.....$2199
DESKPRO 386-20E 40Mb.....$3799
DESKPRO 386-25MHz-110Mb..$6499
DESKPRO 386-33MHz.....CALL
DESKPRO 286E-40Mb.....$2399
LAPTOP SLT 20Mb.....$3699
LAPTOP SLT 40Mb.....$3979

EVEREX

STEP 286 - 12MHz 1Mb.....$1269
STEP 386SX 1Mb.....$1499
STEP 386/20 4Mb.....$2899
STEP 386/33 2MB RAM.....$3599

DISCOUNT PRICES FOR SOFTWARE

ALR POWERFLEX

40MB HD, 1MB RAM
CALL FOR LOWEST PRICE

ALR 25MHz-DT w/40MB HD .....
.....$2295
ALR Powercache 486, EISA
150MB, 8MB RAM ....BEST PRICE

IBM PS/2

55SX-30Mb $2499
50Z-30Mb $1899
30-286/30Mb ...$1749

HEWLETT PACKARD

Deskwriter/Deskjet+
$779/649
ScanJet Plus/Paintjet
$1439/959
LaserJet IID
$2399
Postscript Upgrade
$499
1Mb/2Mb RAM Cartridge
$299/459
25-in-1-Font Cartridge for HP Laser
$349

2 MB MEMORY FOR ALL TOSHIBA LAPTOPS...$329

brother

HL-8E Laser $1699
POSTCRIPT .....CALL

NEC

2A/3D $449/619
4D/5D $1199/2199

EPSON

FX-850.....$329
LQ-510.....$329
LQ-1050.....$689
FX-1050.....$439
LQ-850.....$529
LQ-2550.....$925
EPL-6000.....$979

FAX

RICOH 15 .....$1059
RICOH 35 .....$1499
SHARP
330 .....$775
510 .....$999

DICONIX

Portable Printer ...$339

AST RESEARCH INC. 486

25MHz, 2Mb RAM, 150Mb HD..$6727
AST 33MHz.....Best Price
AST 386SX $1699
AST Premium 286, monitor card, 20Mb/40Mb $1350/1450
AST BRAVO/SX .....Call

MURATA FAX

M900 .....$519
M1400 .....$639
PC F7 IN STOCK

CITIZEN

GSX 140
IN STOCK

PANASONIC

1124 Printer $295
1624 .....$439
1181 .....$179
LASER $1329

OKIDATA

320 .....$349
321 .....$457
390 .....$439
391 .....$619

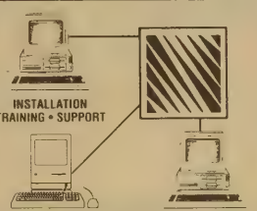
LEADING EDGE

MDL "D" COMPLETE
2 Floppy drive
Mono-Monitor
$599

NOVELL NETWORKS

NOVELL GOLD RESELLER

AUTHORIZED GOLD CONNECTIVITY SOLUTIONS



Call LARRY or AARON (213) 478-0768

Macintosh

MAC IIci 80Mb HD/5Mb RAM..$5150
MAC IIcx base/40Mb....$3109/3549
MAC SE/30 2Mb RAM/40Mb..$3149
LaserWriter NT/NTX $2999/3999
Imagewriter II/LQ $419/979
External HD 20Mb/30Mb...$429/499
Radius Full Page/2 Page...IN STOCK
Macintosh Portable 40Mb.....$4399

TOSHIBA

Great Laptops

FROM THE #1 TOSHIBA AUTHORIZED DEALER IN THE WEST COAST.
"ALL IN STOCK"

Memory upgrade - Carrying cases - Ext. Drives - accessories

NEW PRODUCT
T-1000XE & T-1200XE
IN STOCK

PRINTERS

PAGELASER 6 .....$999
321 SL/341 SL ...CALL/579
321 SLC/351 SX...$589/939
Exp. 301/Exp. 311 $329/$349

T-1000 SE.....IN STOCK
Battery operated PC-Notebook

T-1000 .....IN STOCK
TOSHIBA Smallest

R-1200HB/FB.....IN STOCK
Light - Small - HD

T-3100E/40Mb .....IN STOCK
Full desktop capabilties

T-1600-20/40Mb.....IN STOCK

T-3100SX/40Mb .....IN STOCK
80386SX-battery

T-3200SX/40Mb .....IN STOCK
Ideal for Desktop Replacement

T-5100 40/100Mb.....IN STOCK

T-5200 40/100Mb.....IN STOCK

T-8500 100Mb .....ON DEMO
25MHz - (TOSHIBA's first desktop) 6 ports including one SCSI

What Is Success?

or Why UNIX Is Not UNIX

BY BENNETT FALK

I don't want to be troublesome, but UNIX is beginning to cause me philosophical difficulties. I have always been an empiricist at heart, and for a long time, if someone walked up to you on the street and started talking about UNIX, you could be certain they were talking about an operating system that actually ran on a computer.

UNIX

You might have to ask (if you couldn't guess from the way your interlocutor dressed) which variety of UNIX was meant: AT&T UNIX or Berkeley UNIX, or XENIX. Even this, however, was basically an answerable question. And once the "Which UNIX?" question had been answered, you and the person you were talking to were comfortably situated in a world of real things.

IT STARTED AT BELL LABS...

UNIX started life in 1969 as a project of Bell Laboratories to provide a congenial working environment for software engineers and the clerical staff that supported them and to explore some novel ideas about hierarchical filesystems and time-sharing. The "congenial working environment" evolved into an open-ended set of software tools that could be endlessly recombined to do new and interesting things. The "novel ideas" developed into a sophisticated operating system kernel which conveniently works behind the backs of the users.

The first major step in the development of UNIX was to "port" the operating system from assembly language into C. At the time, C was a new thing, a language that combined the low-level control and efficiency of assembly language with the processor independence of FORTRAN or BASIC. Once the operating system had been rewritten in C, it could be moved to nearly any hardware platform capable of supporting a C compiler. The operating system took on a life of its own, independent of the limitations of the hardware on which it was originally developed.

AND THEN IT GOT COMPLICATED...

The idea of a portable operating system that could be provided in source code form acquired a devoted audience among research institutions; by the late 1970s, the University of California at Berkeley was becoming a center for UNIX development.

Also in the late 1970s, UNIX was beginning to have some commercial appeal, and a number of vendors undertook ports of UNIX with the intention of marketing a run-time system.

The commercial software vendors required that AT&T distribute stable UNIX releases. The research institutions, on the other hand, wanted "interesting" software. These demands produced a series of organization changes and software releases at AT&T.

The UNIX Support Group was formed as a separate entity from Bell Laboratories and was responsible for the release of System III (1982) and System V, Release I (1983). USG was eventually replaced by the UNIX System Development Laboratory, which produced System V, Release 2 (1984), and AT&T Information Systems, which produced System V, Release 3 (1987), and finally by UNIX International which produced System V, Release 4 (1989).

BERKELEY UNIX

The cultivation of System V's commercial potential has dictated a less ambitious research effort from AT&T, and consequently many of the technical innovations in UNIX over the last decade are products of UNIX development at Berkeley.

As with the original UNIX, the developments at Berkeley combined a commitment to a convenient user environment with an interest in esoteric features. On one hand, there were changes that affected users directly, such as the Berkeley utilities ("more,"

The cultivation of System V's commercial potential has dictated a less ambitious research effort from AT&T, and consequently many of the technical innovations in UNIX over the last decade are products of UNIX development at Berkeley.

Copyright © 1990 by Bennett Falk. All rights reserved. *Bennett Falk lives in the Bay Area, writes when he can, and hopes for the best. He works for Sybase, but the opinions and attitudes expressed here are his own.*

GCS

TOP OF THE LINE PRODUCTS AT BOTTOM OF THE LINE PRICES

- Fully IBM Compatible
- We Are #1 in Customer Support
- One Year Warranty Parts & Labor
- True Multiuser for PC XT/AT
- Lowest Price Anywhere

WE do networking

Dealer's consultants inquiries are welcome

12 MHz 286 0 WAIT (SI=15.3) EXCELLENT HIGH SPEED

- 512K Memory on Board
- 4MB Expandable
- 230W (110/220V) P/S
- AT Deluxe Case
- Hercules Comp. Graphic
- Clock/Calendar (Battery Bkup)
- Parallel Printer Port
- Everex FD/HD Controller 1:1
- 1.2 MB Floppy Drive (Japan)
- 101 Enhd Keyboard (Japan)
- TTL (Tilt & Swivel) Monitor
- Operation Manual

BEST BUY

- For 16 MHz Add . . $100 (same config as above)

$624

XT 12 MHz Bare Bone	$139
AT-286 12 MHz Bare Bone	259
AT-286 16 MHz Bare Bone	329
AT-386SX 16 MHz Bare Bone	449
AT-386 25 MHz Bare Bone	799

HOT SPECIALS

Arcnet LAN CARD	$69
ST-296N 85MB HD (28ms) & Kit	529
Toshiba 720KB Floppy Drive	59
Miniscribe 20MB Hard Disk	179
14″ Tilt & Swivel Monitor Used	49
EGA Card w/Printer Port	79

MONTHLY SPECIALS

• Fujitsu Fax Machine & Kit	$799
• 1024x768 .28DP VGA Monitor	409
• 4 FD/2 HD Controller 1:1	99
• Everex FD/HD Controller 1:1	89
• Serial Card	14
• AT-XT Printer Card	10
• AT-XT Dual Port Game Card	10
• XT 12 MHz Motherboard	69
• 101 Enhanced Keyboard (Japan)	54
• ATLAS 2400 External Modem	109
• ATLAS 2400 Internal Modem	89
• 360KB Floppy Disk Controller	14
• Seagate ST-251-1, 40MB, 28ms	324
• NEC-D5655, 150MB, ESDI, 17ms	799

386-25 MHz w/64KB Cache RAM

64K Cache on Board Exp. to 256K

- 1 MB RAM Installed
- 16 MB Expandable
- 230W (110/220V) P/S
- AT Deluxe Case
- Hercules Comp. Graphic
- Clock/Calendar (Battery Bkup)
- 2 Serial/2 Parallel/1 Game
- 1:1 4FD/2HD Controller
- 1.2 MB Floppy Drive (Japan)
- 101 Enhd. Keyboard (Japan)
- TTL (Tilt & Swivel) Monitor
- Operation Manual

BEST BUY

$1599

OPTIONS

14″ Flat Screen	add . . . $35
14″ Color	add . . . 149
14″ VGA	add . . . 349
Deluxe Tower Case	add . . . 120

386SX 16 MHz 0 Wait

- 1 MB RAM Installed
- 8 MB Expandable
- 230W (110/220V) P/S
- AT Deluxe Case
- Socket 80387
- 1:1 4FD/2HD Controller
- 1.2 MB Floppy Drive
- CMOS Clock Calendar
- 101 Keyboard (Japan)
- 16 Bit VGA Card
- 14″ (Tilt & Swivel) VGA Monitor
- 2 Serial/1 Parallel/1 Game
- Operation Manual

$1299

386-25 MHz 0 Wait

- Deluxe Vertical Case
- 1 MB Installed
- 8 MB Expandable
- 200W (110/220V) P/S
- Socket 80287/80387
- 1:1 4FD/2HD Controller
- 1.2 MB Floppy Drive
- 1.44 MB Floppy Drive
- NEC 66 MB HD (23ms)
- CMOS Clock Calendar
- 101 Keyboard (Japan)
- Hercules Comp. Graphic
- 14″ Flat Screen w. Tilt & Swivel Monitor
- 2 Serial/2 Parallel/1 Game
- Operation Manual

$1899

386-33 MHz w/64KB Cache RAM

64K Cache on Board Exp. to 256K

- Deluxe Tower Case
- 1 MB RAM/16 MB Exp.
- 250w (110/220) P/S
- Weitek/80387 Socket
- 1:1 4FD/2HD Controller
- 1.2MB Floppy Drive
- 1.44MB Floppy Drive
- NEC 66 MB HD (23ms)
- CMOS Clock Calendar
- 101 Keyboard (Japan)
- .28 (1024x768) VGA Monitor & VGA Card
- 512KB (1024x768 Res.)
- 2 Serial/1 Parallel/1 Game
- Operation Manual

$3099

DEPOT REPAIR

- Fast, Reliable & Guarantee
- Volume Accounts, call for SPECIAL PRICING!!!
- Call for other DEPOT SOLUTIONS to on-site maintenance.

• **Data General** • Blower Motors • Spindle Motors • Linear Motors • R/W Heads • Disk Drives • Tape drives • CRTs • Printers • CPU's • Memories • Communications • **CAD/CAM** • Tektronix • Mitsubishi • V.M.I. • Ramcom Systems • **PERSONAL COMPUTER** • IBM-PC/XT/AT & Compatible • Compaq • Leading Edge • Apple

GATETRONIX CONTROL SYSTEMS INC.

HARDWARE & SOFTWARE SERVICES

15541 Broadway Center Street, Gardena, CA 90248

BROADWAY CENTER BUSINESS PARK

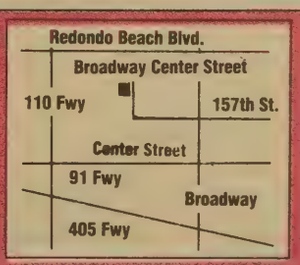
(corner of Broadway & 157th St.)

Tel: **(213) 715-6086**

Fax: (213) 715-6649

VISA AND MASTER CARD, 3% SURCHARGE

FINANCING AVAILABLE



*IBM PC is a registered trade mark of IBM Corp.

**All GCS Systems Are Fully Assembled, Tested & Include 1 Year Warranty. Prices Subject to Change without Notice.

SHOP TILL YA DROP
Computer Swap

UPCOMING SHOWS

ANAHEIM CONVENTION CENTER
MAY 5, 1990

GLENDALE CIVIC AUDITORIUM
MAY 6, 1990

CSUN, NORTH CAMPUS
May 12, 1990

RIVERSIDE CONVENTION CENTER
MAY 26, 1990

ANAHEIM STADIUM
JUNE 2, 1990

GLENDALE CIVIC AUDITORIUM
June 10, 1990

10AM to 5 PM; Except Riverside and Glendale open 10 AM to 4 PM
Admission: $5.00 Children under 12 FREE
A RICHARD JAMES PRODUCTION • FOR INFO. CALL (415) 340-9113

DISK DRIVE REPAIRS

Quality Service Support

• 7 Day Turnaround
• 24 Hour Service Available
• Exchange Service
• Quantity Discounts
• 120 Day Warranty

DISK DRIVE SALE
20MB
$100 with Trade In
Call for kit prices

WE USE GENUINE ORIGINAL MANUFACTURER PARTS

Unbeatable Prices
XT, AT, 286, 386
Call for $$$

BETAMAG COMPUTERS
(818) 998-2785
8900-K Eaton Avenue, Canoga Park, CA 91304

the "vi" editor, and the C-shell) and modified versions of AT&T utilities ("ps" is a good example).

On the other hand, there were technical innovations that may not be immediately obvious to the casual user. These included implementations of 32-bit addressing, demand-paged virtual memory, support for the TCP/IP network protocol, job control, symbolic links, and sockets for interprocess communication.

Though UNIX development at Berkeley has been primarily a vehicle for research, Berkeley UNIX enjoys some very powerful advocates (DEC and Sun Microsystems, for example) in the commercial market.

In recognition of the commercial viability of the Berkeley product, System V incorporates most of its features, but typically these are not simply borrowed from Berkeley UNIX ("vi" may be an exception to this), but implemented in a new way. Thus System V's approach to paging is different from that of Berkeley UNIX; interprocess communication is handled by streams rather than by sockets, job control is achieved through shell layering, and "pg" is used to display a file one screenful at a time.

Now once the economic considerations of software vendors have been introduced, we begin to leave the world of real things. In the UNIX world there is tremendous pressure for standardization, and it is important to realize that this pressure does not originate from frustrated users who can't remember whether to type "ps -aux" or "ps -ale".

DAWN OF THE MUTANT VARIANT

The dichotomy between Berkeley UNIX and System V can be a very frustrating thing for users. But the users' frustration has not prevented vendors from carrying out the original UNIX imperative by porting features from both systems to produce new hybrids. These hybrids account for the great degree to which UNIX has penetrated the "workstation" and "small to mid-sized multiuser computer" markets.

While having a large share of the market counts for success throughout most of the computer industry, the success of UNIX has been a mixed blessing. There are so many different UNIXes in distribution that the application programmers find out very quickly that UNIX is never just UNIX, and the business of porting software from one platform to another is very expensive. Almost inevitably the ported application (whether it's a word processor or a spreadsheet or a database manager) behaves just a bit differently on each new platform, and so the costs of maintaining the application also increase.

STANDARDS

Now once the economic considerations of software vendors have been introduced, we begin to leave the world of real things. In the UNIX world there is tremendous pressure for standardization, and it is important to realize that this pressure does not originate from frustrated users who can't remember whether to type "ps -aux" or "ps -ale". The move to standardize comes from a fundamental business impulse to cut costs. This means that standards, when we have them, will be the result of political negotiation and not technical innovation.

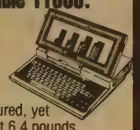
The next challenge for people interested in UNIX will not be mastering the differences between Berkeley UNIX and System V, but mastering the differences between real software and the standards that are supposed to describe it.

The preferred form for UNIX standards is the "interface definition" (see AT&T's three volume System V Interface Definition (SVID), for example), a document that exhaus-

SPECIAL! New Citizen 200GX.....$199 (Ask About Color Option)

Before You Choose... See Toshiba's Affordable T1000.

T1000



- Richly featured, yet weighs just 6.4 pounds
- Includes 512KB memory, expandable to 1.2MB
- 720KB 3.5" floppy drive, reflective supertwist
- Runs on NiCad rechargeable battery pack or AC power for continuous operation

$619

TOSHIBA

The Perfect Traveling Companion.

T1000SE

- Just 5.9 pounds and fits in a briefcase
- 9.54 MHz 80C86 CPU
- 1MB RAM standard, expandable to 2 or 3MB
- 9" diagonal backlit LCD, 640x400 graphics, CGA compatible
- Industry-standard 1.44MB 3.5" diskette drive
- Sculptured keyboard with dedicated function and cursor keys

$1079

TOSHIBA

Weighs so little. Does so much.

T1600

- 12 MHz 80286 microprocessor
- High-performance 20MB or 40MB hard disk
- 1.44MB 3.5" diskette drive-PS/2™ compatible
- 1MB memory expandable to 5MB. w/LIM/EMS

40/20MB. .$3120/2729

TOSHIBA

T/3200SX

- 16 MHz 80386SX CPU
- 2 Internal IBM Compatible expansion slots
- 1 dedicated modem slot for T1200/T1600 style modem
- 1MB memory expandable to 13MB
- 40MB Hard disk with 25ms access
- 1MB VGA compatible display system with high resolution gas plasma screen

$3838

TOSHIBA

Toshiba's Top Power Portable.

T5200

- 80386 CPU at 20 MHz: 80387 coprocessor
- Two internal IBM compatible expansion slots
- 40MB or 100MB hard disk standard
- High-resolution gas plasma display supports built-in VGA capabilities
- 2MB RAM expandable to 8MB

40/100MB.$4596/4940

TOSHIBA

New PageLaser 6: Small Size, Small Price

PageLaser 6

- Exceptionally compact footprint is ⅓ less than other lasers
- All around affordable: attractive price, low per page costs, long life & generous warranty
- HP LaserJet Series II and IBM Proprinter emulations for maximum software compatibility
- 2 HP LaserJet® compatible font cartridge slots

$948

TOSHIBA

140 Different Name Brands...CALL Us For Your Best Quote

AIT ARTIFICIAL INTELLIGENCE TECHNOLOGY

INTRODUCES

ZERO MS HARD DRIVE ACCESS TIME SYSTEMS

New!

THEY CAN'T CATCH OUR DUST

50 To 150 Times Faster

Our advanced caching intelligent controller card allows us to have zero to half MS Access Time in many applications such as network fileserver, CAD station and multiuser systems. In operation systems such as DOS, PC-MOS, NOVELL, 10 NET, 3 COM, ETC. That's 50 to 150 times faster than your normal random access time. In fact the overall read/write performance of A.I.T. 386 is 50 times faster (5000%) than Compaq 386/25

The Executive 386 has a hard drive access speed almost undetectably different from that of dynamic memory. For the first time the large capacity of a hard drive is accessible at an access time of ONE HALF MILLISECOND (½ MS). Why limit yourself to 2, 8 or 16 megabytes of fast memory, and pay $500 per megabyte, when you can have up to 160 megabytes at a cost as low as $10 per megabyte?

EXECUTIVE 386/25C

FREE ONSITE SERVICE

IMAGINE...

The Executive 386 comes with a full year warranty supported by knowledgeable trained engineers.

TOLL-FREE TECHNICAL SUPPORT

Our friendly and knowledgeable factory trained engineers are just a phone call away. Most of the time we can solve the problems right over the phone.

AND THERE'S MORE...

FEATURES:

- Advanced intelligent cache floppy & hard drive controller with 512K RAM
- 2MB memory expandable to 16MB
- 64K Cache memory expandable to 256K at 0 wait state
- 1.44 and 1.2 TEAC floppy
- VIDEO SEVEN 1024x768 16 bit VGA card
- SONY 1304 (1024x768) multisync monitor
- 160MB ESDI Hard Drive
- Landmark 44 MHz

$4777

COME DEMO THE FASTEST COMPUTER YOU'VE EVER SEEN...

A.I.T. 386/25 WILL BEAT ANY 486 ON THE MARKET!!

(Free Mouse To Individual Who Can Find One Faster)

Authorized Dealer: AST, CITIZEN, MITSUBISHI, TOSHIBA, EVEREX & MORE

386 SX

- Intel 80386SX chip set
- 1MB memory (Simm chip, 80NS)
- Deluxe mini tower case
- 1.2 or 1.44 floppy
- 101 enhanced keyboard
- 2 serial ports, 1 parallel port, 1 game port
- 1:1 Interleave floppy and HD controller
- 44MB Conner error free HD w/imbedded controller and 32K cache
- Emerson VGA monitor
- Paradise 1024x768 Hi-resolution VGA card w/256K RAM
- 1 year warranty

$1865

EVEREX AGI-1800C

- 80286 6/12 MHz
- 1MB RAM
- 200 Watt power supply
- 1.2MB floppy drive
- Fixed & floppy cont.
- Parallel-serial ports
- Clock/calendar
- Monographics
- Amber monitor

w/40MB Hard drive . .$1649

EVEREX STEP 286

- 80286
- 1MB RAM 0 wait
- 200 Watt power supply
- 1.2MB floppy drive
- 40MB hard drive
- Fixed & floppy cont.
- Parallel-serial ports
- Clock/calendar
- Monographics
- Amber monitor
- 1 year on site warranty

2701B-12MHz $2145 2701A-16MHz $2195

EVEREX AGI-3000D

- 80386-16 MHz
- 1MB RAM 0 wait
- 1.2MB floppy drive
- 40MB hard drive
- Parallel-serial ports
- Clock/calendar
- Monographics
- Amber monitor
- 1 year on site warranty

$2389

IBM SOFTWARE

Over 300 Titles Discounted

- Aldus Pagemaker.....$499
- Bedford Accounting 175
- Carbon Copy Plus 129
- DAC Easy Accounting.....63
- DAC Bonus Pak.....118
- D Base IV Plus 449
- Direct Access 58
- Dollars&Sense.....109
- Falcon 32
- Fastback Plus 119
- Flight Simulator.....36
- Generic CAD 65
- Graph In The Box 82
- Gunship.....35
- Laplink Plus 95
- Lotus 1-2-3.....339
- Mace + Utilities 4.0.....59
- Managing Your Money ...139
- Microsoft Excel.....279
- Microsoft Works 85
- Microsoft Word 5.0.....249
- Microsoft Windows.....69
- Microsoft C Compiler 5.0 .295
- Microsoft Quick C.....69
- Multimate Advantage II. . 299
- Norton Utilities Advanced . .89
- Peachtree Accounting....159
- PFS First Choice 105
- PFS First Publisher 85
- PFS Professional Write . . .125
- Printshop 39
- Quicken.....39
- Quattro 179
- Spacequest.....35
- Sprint 149
- Turbo Basic.....69
- Turbo C 2.0.....106
- Typing Tutor IV 39
- Ventura Publisher 2.0 499
- Where Is Carmen San Diego 28
- Wordstar Pro Release 4 . .259
- Wordperfect 5.1 269

AIT ARTIFICIAL INTELLIGENCE TECHNOLOGY

3900 Birch St., #103
Newport Beach, CA 92660

(714) 752-2060

Mastercard Visa

NEC PORTABLES

Ultralite	Lightest, smallest, full function laptop computer; NEC V-30/10 MHz; 640K RAM; 1 MB silicon hard drive; EL backlit LCD/CGA: serial, parallel, modem, RJ-11, expansion bus; AC battery; 4.4 lbs	1 MB $1495
Ultralite	Lightest, smallest, full function laptop computer; NEC V-30/10 MHz; 640K RAM; 2 MB silicon hard drive; EL backlit LCD/CGA: serial, parallel, modem, RJ-11, expansion bus; AC battery; 4.4 lbs	2 MB $1795
ProSpeed 286	Most powerful 80286 laptop; 80C286/16 MHz, Up to 9 MB RAM; 1.44 MB 3.5" floppy disk; paper white backlit LCD/VGA; LTX™ memory, modem; serial, parallel, external FDD, RGB video, keyboard, RJ-11, modem; A/C battery	20 MB $2595 40 MB $2895 100 MB $3495

NEC Portable 286 Systems $500 Rebate

ProSpeed 386	Desktop quality that is portable; 80386/16 MHz; up to 8 MB RAM; 1.44, 3.5" floppy disk; paper white backlit LCD/VGA/EGA; LTX™ memory, modem; parallel, serial, modem, RJ-11, VGA monitor, docking station optional; A/C battery	40 MB $3795 100 MB $4395
80386 SX	16 MHz, 1 MB Memory Up to 9 MB, Monographic 640x480 VGA, 3.5" 720/1.44 MB Drive, Serial/Parallel	40 MB $3395 100 MB $3895
ProSpeed CSX	**First color display laptop computer.** 80386SX/16 MHz CPU/clock speed; up to 4 MB RAM; 1.44 MB, 3.5" floppy disk; color LCD/VGA/EGA; parallel, serial, RGB, monitor, external FDD, modem	42 MB $4795 100 MB $5395

NEC 2A
14" Super VGA (800x600) $469

NEC 3D 14" 1024x768 . . . $619

NEC 4D
16" Super VGA $1099

NEC 5D 20"
1024x768 Interlaced $2195

ACCESSORIES

Docking Station for 386	$695	Battery Cartridge (standard) for ProSpeed 286	$147
1.44MB 3.5" Floppy Disk Drive for UltraLite	295	Battery Slice (High Capacity) for ProSpeed 286	295
256KB Ram Card for UltraLite	249	2400BPS Modem for ProSpeed 286	295
Black Leather Carrying Case for UltraLite	99	2 MB Ram Card for ProSpeed 386	895
1MB Ram Card for ProSpeed 286	595	8 MB Ram Card for ProSpeed 386	2695
4MB Ram Card for ProSpeed 286	1695	Battery Slice for ProSpeed 386	249
Expansion Station for ProSpeed 286	747		

NEC Authorized NEC Sales & Service Center

Corporate PO's Accepted
1 Year Warranty

ICC
INTERNATIONAL COMPUTER CENTER
The Right Source

818-894-1100

FAX 818-891-3285
16175 ROSCOE BLVD., SEPULVEDA, CA 91343
All prices include cash discount. Visa/ M/C add 3%. Prices subject to change.

NEC and above products are registered trademarks of NEC Technologies.

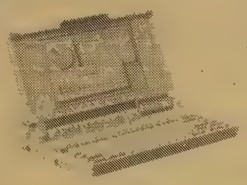
TOSHIBA LAPTOP SPECIAL

T1000 LAPTOP
1200 Baud Modem
768K Card
Carrying Case

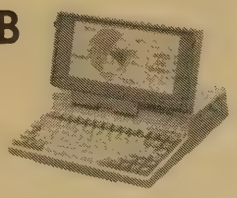
$995

NEW

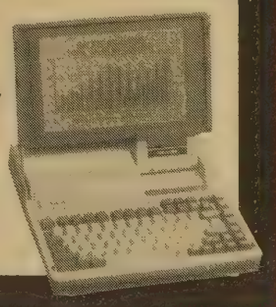
T1000 SE
80C86, 9.54 MHz,
1 MB RAM 1.44 Dr.,
CGA Backlit



T1200 HB
80C86, 1 MB RAM
20 MB HD, 20ms



T-1600
80C286, 1 MB RAM,
20 MB Hard Disk,
1.44 MB 3½" Dr.,
Detachable backlit
EGA display



PRINTERS

- **301 LAPTOP**
  Includes rechargeable battery & A/C adapter. **$315**
- **311 Express Writer**
  24 pin **$359**
- **P 321 SL**
  216 cps. dot LQ **$439**
- **P 341 SL**
  216 cps, 72 cps LQ, wide carriage **$595**
- **P 351 SX**
  360 cps., 120 cps LQ **$920**

PAGELASER 6
6 pages per minute
$969

- **PageLaser 12**
  12 pgs. per min., up to 25,000 pgs. **$2327**

- CORPORATE P.O.'S ACCEPTED
- 1 YEAR WARRANTY
- AUTHORIZED TOSHIBA SALES & SERVICE CENTER

T1600/40
80C286, 1 MB RAM
20 MB HD, 1.44 MB
3½" DR.
Detachable backlit
EGA display

T3100/40
80286, 1 MB RAM
40 MB HD, 20 ms
Battery Operated

T3100 SX
80386SX, 16 MHz, 1 MB RAM
40 MB HD, 1.44 MB Dr.
Plasma Display

T3200 SX
80386, 16 MHz, 1.44 MB Dr., 1 MB RAM, 40 MB HD, VGA, Plasma Display, 2 IBM expansion slots

T5100/100
80386, 100 MB HD
25 MS, EGA

T-5200/40
80386, 2 MB RAM,
40 MB HD, 1.44 fl.,
29 MS, VGA

T-5200/100
80386, 100 MB HD,
25 MS, VGA

EXTRAS

- Modem for T-1000 . . . . . $109
- Toshiba 5¼" ext. drive 225
- Compatible 5¼" ext. drive 199
- 768K card for T-1000 . . . . . $269
- 1 MB memory for T-1200. . . . $450
- 2 MB memory for T-1600 . . . . $395
- 2 MB memory for T-3100 SX . . . $495
- 2 MB memory for T-5100 . . . . $395
- 2 MB memory for T-5200 . . . . $395
- 1 MB memory for T-100SE $525
- 2 MB memory for T-1000SE . . . $829
- 2 MB memory for T-3200SX . . . $395

NEW ARRIVALS
Note Book Size PC
—Call to place order—

T1000XE
80C86, 9.54 MHz, 1 MB Ram, 20 MB HD, Backlit Supertwist LCD Display, 6.2 lbs, many more features
Call

T1200XE
80C286, 12 MHz, 1 MB Ram, 20 MB HD, 1.44 Floppy, Supertwist LCD Display, 7.9 lbs, many more features
Call

For Further Information On Toshiba Products, Please Call

ICCC
INTERNATIONAL COMPUTER CENTER
The Right Source

818-894-1100

FAX 818-891-3285

16175 ROSCOE BLVD. SEPULVEDA, CA 91343

Above prices reflect cash discounts—Visa/M/C add 3%. Prices subject to change.

Commodore®
AMIGA®

PRODUCTIVITY SYSTEM
- Amiga 2000 HD
- 40MB Hard Drive + Controller
- AT Bridge Board (IBM Compatibility)
- RGB Monitor

Complete
$3195
Plus FREE w/System... Wordperfect INSTALLED

AMIGA 2500/030
- Computer
- 3.5 Floppy Drive
- 3MB Ram
- 40MB H/D w/2091 Controller
- 680030/68882 CPU 25MHz Clock Speed
- Mouse

$3350
LIMITED OFFER

AMIGA 2000
- Computer
- 3.5 Floppy Drive
- 1 MB Ram
- 1084 Color Monitor

$1675

NOW! Special Discounts For Students And Educators!!
SPECIAL CONFIGURATIONS AVAILABLE ON DESKTOP VIDEO, MUSIC, DESKTOP PUBLISHING...CALL!!

HARDWARE SPECIALS
- Amiga 500 (w/FREE Software!) $549
- Amiga 2000 H/D (Bridge Card Optional) $1,975
- Mini Meg's (2MB) $289
- Modem 2400 Baud $119
- Supra RAM 2/8 Board $300
- Super Genlock (Regular) $650
- Super Gen 2000S ..... Call
- 3.5 Floppy Drive (w/this ad) ..... $129.95 LIMITED OFFER

- New Software Arriving Daily! Over 1500 Items In-Stock To Choose From.
- User Group Discount 10% OFF Software. (Not good with any other specials. Software only.)
- 10 Years in L.A. and Orange County.

Financing Available.

NEW A3000 CALL!!

Authorized Commodore/Amiga Sales & Service Dealer
CENTURY COMPUTER SYSTEMS
Open Tues-Fri 10am-6pm Sat 10am-5pm
841 E. Whittier Blvd., La Habra, CA 90631
(714) 750-3423 • (818) 961-4065 • (213) 697-6977
We Will Meet Any Authorized Dealers Price

COMPUTER DISK SERVICE

SPECIALIZED DRIVE REPAIR

$ 75.00
SEAGATE 5¼" ST 238, ST 225
MINISCRIBE 5¼" 3425, 3435, 3438
MINISCRIBE 3½" 8425, 8438
$120.00
SEAGATE ST 251
MINISCRIBE 3650

Special Low Prices!

FOR SALE NEW!!
380mb Scsi 16ms
MINISCRIBE 9380S
INTERNAL
$ 1,000.00
EXTERNAL - KIT
CALL FOR PRICE
1 YEAR WARRANTY

- Class 100 clean room
- Servowriting capabilities (Call for prices)
- Volume discount
- 120 day warranty on all repairs
- 7-10 day turn around time
- 24 hour turn around - ADD 30%
- Ask about our data recovery (Call for quote)

COMPUTER DISK SERVICE
7745 ALABAMA AVE., UNIT # 8
CANOGA PARK, CA 91304

PH (818) 710-1731
FAX (818) 710-0170

You see the source of my philosophical difficulties: the progress of UNIX from source code distributions to binary distributions to books about how software should behave is an alarming trend away from the stuff that's real toward something that is, well, "meta."

tively describes the legal inputs and expected outputs for some software product. The SVID is a far cry from the authoritative source code distributions that used to come from Bell Laboratories. The SVID, which nowhere contains the tradename UNIX, describes an elaborate black box of which UNIX System V is but one example.

More recently, the Institute of Electrical and Electronics Engineers (IEEE) has produced the Portable Operating System Interface for Computer Environments, commonly known as the POSIX standard. To date one volume of the standard, describing a standard interface to basic input/output, process creation and filesystem access services for application programs written in C, has been published (IEEE Standard 1003.1-1988). Future volumes will contain standards for UNIX shells and facilities, real-time extensions of UNIX, ADA and FORTRAN language bindings, "trusted system" capabilities, network interfaces, and system administration tools. There is no plan at the present time to include a standard for graphical user interfaces in the POSIX collection.

POSIX is not a piece of software, it's a book that describes how software is supposed to work. The book can be ordered from the IEEE Service Center. Be sure to ask for the standard by number, 1003.1. The cost is $32. I asked for the POSIX standard and received two copies of a very dry monograph about Power Motor Synchronization. The full address is:

IEEE Service Center
445 Hoes Lane
Piscataway, NJ 08854
1-201/981-0060

The POSIX book contains a description of a standard interface produced by a committee of concerned engineers (some participating as individuals and others representing institutions).

Strictly speaking, the POSIX standard is not something to be implemented; it is simply an ideal to which real systems may claim some degree of compliance. Part of the standard is a definition of the various degrees of compliance, and it's freely admitted that none of the "historical implementations" of UNIX conforms to the standard completely.

IT'S NOT SOFTWARE ANY MORE...

Yet because POSIX isn't a piece of software, there's no way to sit down at a terminal and see for yourself just how POSIX differs from System V or 4.3 BSD or Version 7.

You see the source of my philosophical difficulties: the progress of UNIX from source code distributions to binary distributions to books about how software should behave is an alarming trend away from the stuff that's real toward something that is, well, "meta." This sort of thing has always caused distress among empiricists.

Fortunately, the authors of POSIX perpetuated the strange sense of humor that exists in the UNIX community. In producing the standard, the POSIX Working Group sponsored a "WeirdNIX" contest as an exercise in destructive QA for the standard. The working group solicited technically legal interpretations of the standard that violated the standard's intent. Prizes were offered for "best" (i.e., likely) misinterpretation and "most demented" (violating common sense).

The standard contains the names of the winners, but no mention is made of what they proposed. ■

For months, you've been searching for the perfect 80386 system that delivers high performance at a truely affordable price.

STOP SEARCHING...

DR 80386 - 33 - Cache

$1729

- 33 MHz 386MB w/ Intel 33 MHz CPU
- 32 KB Static-RAM Cache w/ Intel 82385 Cache Controller
- 1 MB RAM on Backplane Memory Board
- 1.2 MB Floppy Disk Drive
- AT 1 : 1 MFM Controller
- Deluxe AT Case & 230 Watt Power Supply
- OMNI 102 (Northgate Type) Keyboard
- 12" Amber Monochrome Monitor
- 2 Serial & 1 Parallel Port
- Herc Compatible Display Card
- 80387 Socket Ready

DR 80386-25 CACHE

$1359

- 25 MHz MB w/ Intel 25 MHz CPU
- 32KB STATIC RAM CACHE
- 1 MB RAM on Board
- 1.2 MB Floppy Disk Drive
- AT 1 : 1 MFM Controller
- Deluxe AT Case & 230 Watt Power Supply
- OMNI 102 (Northgate Type) Keyboard
- 12" Amber Monochrome Monitor
- 2 Serial & 1 Parallel Port
- Herc Compatible Display Card
- 80387 Socket Ready

DR 80386SX - 16MHz

$879

- 16 MHz 386SX w/ CPU
- 1 MB RAM on Board (Upgrade to 8 MB)
- 1.2 MB Floppy Disk Drive
- AT 1 : 1 MFM Controller
- Deluxe AT Case & 230 Watt Power Supply
- OMNI 102 (Northgate Type) Keyboard
- 12" Amber Monochrome Monitor
- 2 Serial & 1 Parallel Port
- Herc Compatible Display Card
- 80387SX Socket Ready

DR 80286 - 12MHz

$589

- 12 MHz 286MB w/ 12MHz CPU (VLSI)
- 1 MB RAM on Board
- 1.2 MB Floppy Disk Drive
- AT MFM Controller
- Deluxe AT Case & 230 Watt Power Supply
- BTC 101 Keyboard
- 12" Amber Monochrome Monitor
- 2 Serial & 1 Parallel Port
- Herc Compatible Display Card
- 80287 Socket Ready

OPTIONS: (for systems above)

EGA option (640x350, card & monitor)	+$325	VGA option (640x480, card & monitor)	+$395	SuperVGA option (1024x768, card & monitor)	+$455
40MB, 28MS HDD	+$335	65MB, 25MS RLL HDD	+$425	1.44MB FDD	+$78

SPECIALS!!!

VIDEO CARDS:

Genoa 6300 SuperVGA, 1024x768, 256KB (Non-interlace)	$135
Paradise Chip Set SuperVGA, 1024x768, 256KB	$105
Genoa SuperEGA, 800x600, 256KB	$75
Color Graphics Card, 640x200	$26
Monochrome Graphics Card, 720x350	$22

DRIVES:

D.S. 1.2MB, 5-1/4" Floppy Disk	$65
D.S. 360 KB, 5-1/4" Floppy Disk	$55
NEC 3142, 42MB/65MB, 25MS Hard Disk	$345
NEC 5655, 157MB, ESDI, 18MS Hard Disk	$775
Conner 3184, 80MB, 22ns HDD	$545
Conner 3104, 104MB, 22ns HDD	$605
Conner 3204, 204MB, 22ns HDD	$1015

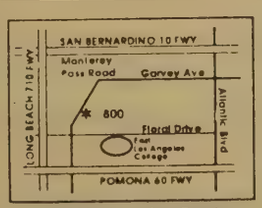
MONITORS:

PB 1272A, 12", AMBER, MONO, 720x348	$72
GS 1210A, 12", AMBER, MONO, 720x348	$75
GS 1220, 12", BLACK AND WHITE, VGA, MONOCHROME	$115
GS 1410, 14", RGB, 640x200	$205
GS 1420, 14", EGA, 640x350	$310
GS1425 + 14" VGA, 640x480	$325
GS 1430, 14", VGA, 640x480	$340
Livescan, 14" Multisync, 800x600	$365
Loop 1469, SuperVGA, 1024x768	$375
Panasonic 1381 Super VGA, 1024x768, noninterlace	$465

CONTROLLER CARDS:

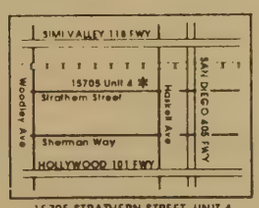
DTC 6280 ESDI	$150
Ultrastor ESDI W/512 Disk Cache, Upgradeable to 4MB	$425
Future Domain SCSI Host Adapter, XT/AT Interface W/Software	$165

Digitech Research Inc.
dba ATLANTIC COMPUTER SYSTEMS
800 Monterey Pass Road
Monterey Park, California 91754
Tel: (213) 267-1638
FAX: (213) 267-1583



800 Monterey Pass Road

TERMS: prices/availability subject to change without notice. All systems carry a 1-Year Labor / 6-Month Parts Limited Warranty. All returned merchandise subject to 20% restocking fee. AT/XT are registered trademarks of International Business Machines. Hayes is a registered trademark of Hayes Computer Technology.



15705 STRATHERN STREET, UNIT 4

PC-SEL inc.
15705 Strathern Street, Unit 4
Van Nuys, CA 91406
Tel: (818) 782-1111
FAX (818) 782-3946

The Price Is Right

Free-, Share-, And Demoware On The ST

BY DAVID HAWKINS

There are a number of programs that you can get without going through a dealer. Some of them you don't even have to pay for. Others you can get, try, and then pay for if you like them. Some are demonstration versions—they lack some features of the full-blown version, but they allow you to see how the program works.

ATARI ST

THE DOWN SIDE

It's nice to get a program with a minimal investment, but there are some risks. The program probably comes with no guarantee that it will work. Depending on where you get it, there might be a greater risk of getting a virus on your disks. Often you get no manual, or a manual that is useless. This means you have to put a certain amount of work into just understanding the program and may never figure out how to get to certain features that you'd like to use. But with that caveat in mind, there's also a lot of value out there.

WHERE TO GET THESE PROGRAMS

One of the most common sources is an Atari BBS (bulletin board system). There are listings at the back of *MicroTimes* of systems you can use your computer and modem to call. A lot of these carry programs. The sysop will often check the program to see if it carries a virus.

Another good source is a local users group. These are also listed in the back of *MicroTimes*. If there's a local group, it might be a good idea to drop in on a meeting. Not only can you get disks of software there, but you can talk to people who use the programs and get some idea of whether the program is what you need. A number of groups pride themselves on keeping the latest version of popular public domain software available.

Copyright© 1990 by David Hawkins. All rights reserved. *David Hawkins is the host of the Atari conference on The WELL (415/332-6106); send email to dhawk. He has one of the first Atari ST 1040s sold in San Francisco. Both monitors, an Okimate 20 color printer, and disks are all over the room.*

WHICH ONES TO GET?

Just about any kind of program is available. Two of the main programs I use are public domain. First is an Atari version of a program that is called "Pyro" on the Macintosh. It's a screen-saver that blanks the screen and then sends up rocket bursts on the screen. The nice thing about the Atari version is that it is in color. Looks great.

The other program is called vkiller. It tries to catch viruses. You can install it to run in the background; when it sees a new disk that looks like it might be carrying a virus, it beeps and flashes the screen. You can also use it to examine disks that you suspect might be carrying a virus.

GEMINI

One great program is Gemini. It's a desktop replacement which works a little differently from the normal Atari setup. You can move files and programs out onto the desktop. It has a built-in UNIX-like shell that you can get to through one window. You can drag a file to a program icon and the program will startup on that file.

There are just a couple of problems with Gemini. One is that you need to be running TOS 1.4, the upgraded ROMs. Also, it was written in Germany and the most recent version is all in German—both in the program itself and in the documentation. Translations are in progress.

EDITORS

A huge editor called Emacs has been ported to the ST. This version is called GNU-Emacs. If you have used Emacs before, this would probably be the version you want to get.

There's also a version of vi for the Atari. It's called Stevie. It doesn't have all the commands of the normal UNIX version of vi, but will do the trick for basic editing.

NETHACK

A large game called Hack is available in a version called Nethack. The graphics are crude compared to most ST games. It uses basic ASCII characters to represent things on the screen. It's an "explore the dungeon-get the loot-kill monsters" type of game. It can be addictive and is pretty challenging.

TELECOMMUNICATIONS

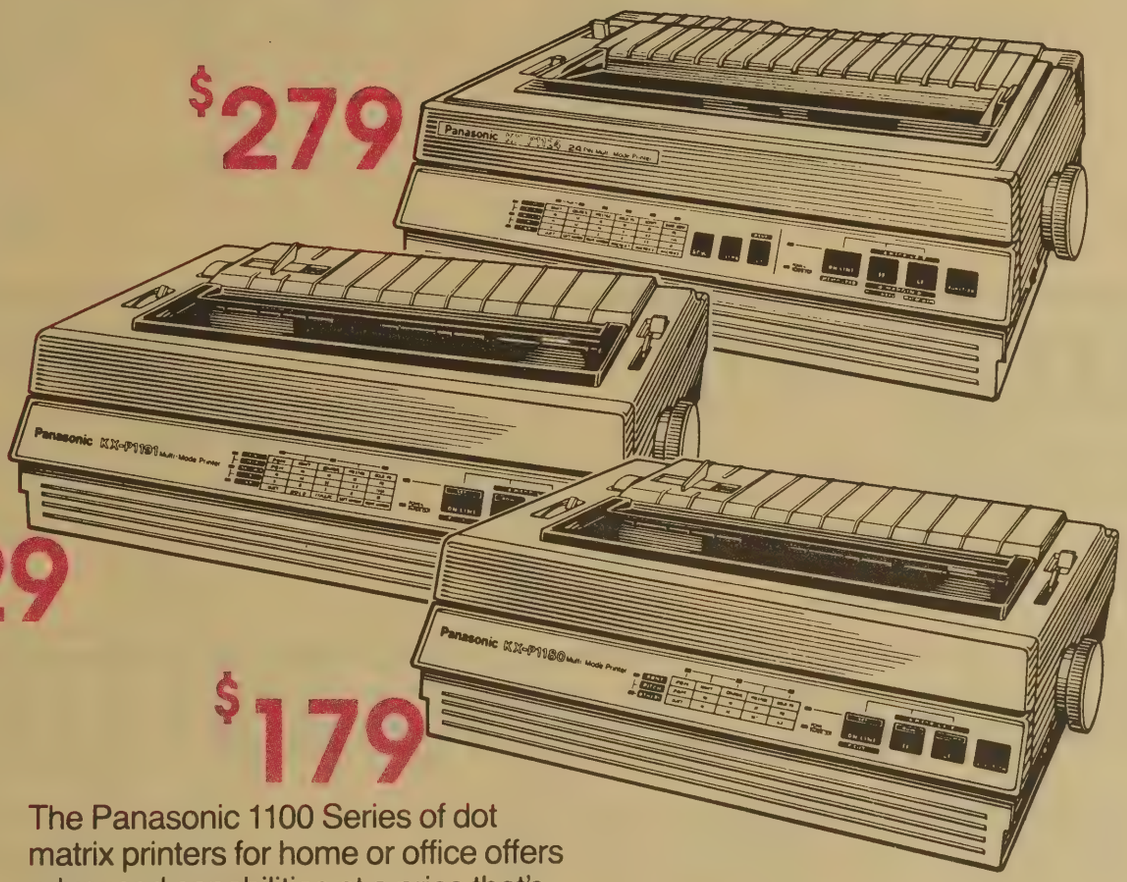
The main telecomm program I've seen on the public domain lists is Uniterm. I've used it just a little, partly because the documentation was so skimpy. I've never found a full manual on it, and I really need one in order to do much with this program.

OTHERS

This is just a start. Some users groups will have hundreds of programs available. Some of these are real gems, while others might not be worth the cost of the disk. But if you enjoy bargain hunting, searching through public domain software might be a lot of fun! ■

At the user group, you can talk to people who use the programs and get some idea of whether a particular disk is what you need. Many groups pride themselves on keeping the latest version of popular public domain software available.

The Panasonic® 1100 Series. The Next Generation in Performance.



The Panasonic 1100 Series of dot matrix printers for home or office offers advanced capabilities at a price that's within reach.

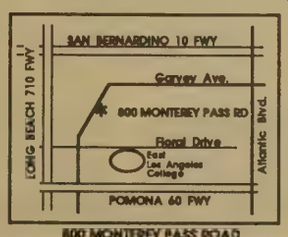
The KX-P1124, KX-P1191 and KX-P1180 are some of the fastest printers in their class with speeds up to 240 cps. They also feature:

- Multiple built-in fonts with excellent print quality.
- Multiple paper paths, push/pull tractor, Perf Cut, paper parking and more.
- Panasonic's EZ Set Operator Panel.
- Rugged, durable design, backed by a 2-year limited warranty.

The Panasonic 1100 Series. The next generation in high performance printers. Promising so much...and delivering it for so little.

Panasonic
Office Automation OA

Digitech Research Inc.
dba ATLANTIC COMPUTER SYSTEMS
800 Monterey Pass Road
Monterey Park, California 91754
Tel: (213) 267-1638



800 MONTEREY PASS ROAD

TERMS: prices/availability subject to change without notice. All systems carry a 1-Year Labor / 6-Month Parts Limited Warranty. All returned merchandise subject to 20% restocking fee. AT/XT are registered trademarks of International Business Machines. Hayes is a registered trademark of Hayes Computer Technology.

$300 VALUE

KORG M3R

BIKE INCLUDED

rackmount synthesizer
w/M1 sounds

$~~1399~~ **$999** SAVE 28%

ROLAND U-20

BIKE INCLUDED

pcm keyboard sample player $~~1695~~ **$1299**

U-220 . . . . . $~~1000~~ **$859**

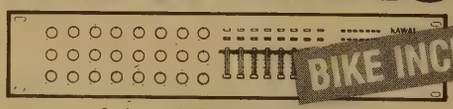
YAMAHA TG55

BIKE INCLUDED

new rackmount AW/M sample player
fm and new drum sounds

$~~1000~~ **$869**

KAWAI MX8SR



BIKE INCLUDED

8 channel 16 input stereo mixer

$~~600~~ **$399** SAVE 33%

RHODES MK60

BIKE INCLUDED

acoustic & electric sound
keyboard controller piano

$~~1895~~ **$999** SAVE 47%

YAMAHA C120

BIKE INCLUDED

MS-DOS portable music computer w/20 megabyte, also IBM compatible

$~~4000~~ **$2399** SAVE 40%

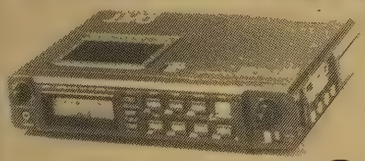
GOODMAN MUSIC

MC, Visa, AX, Optima, Instant Credit

18-Speed Mountain Bike FREE with purchase!

- Rugged 18-speed gearing
- 26″ wheels
- Durable knobby treaded tires
- Use for "off-road" as well as recreational touring!
- Oversized Frame and fork tubing for added strength
- Dual-pressure gum walled tires
- High-strength mountain handle bar/stem
- Padded seat
- Highly visible reflectors by Cat Eye
- Extra-large brake levers
- Three piece, five arm, triple chaining crankset
- Water bottle with holder
- Full Warranty!
- Factory New!
- Factory Perfect!

CASIO PRO/DAT



BIKE INCLUDED

professional & portable
w/case and power supply

~~$1500~~ **$999** SAVE 33%

KAWAI K4

$999
~~$1445~~

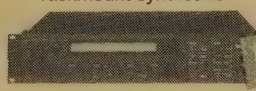
BIKE INCLUDED

multi/timbral, digital/analog
pcm synthesizer

K4R.....~~$999~~.....**$799**

KORG M1R

rackmount synthesizer



BIKE INCLUDED

~~$2295~~ **$1359** SAVE 40%

SANSUI WSX1

6-track plus and 2-track mixer

~~$1899~~ **$1299**
SAVE 32%

BIKE INCLUDED

ROLAND W30

BIKE INCLUDED

16-track Workstation w/amazing sound!

~~$2799~~ **$1949** SAVE 30%

Bike also included with

Korg M1
New Peavey DPM3
New Yamaha SY77
E-mu Proteus
Alesis HR16
Microwave

New Store!

Long Beach
4145 Viking Way
(Near intersection of Bellflower & Carson)
(213) 429-9795

La Brea/Wilshire
780 S. La Brea Ave.
(¼ Block S. of Wilshire)
(213) 937-2177

North Hollywood
4227 N. Lankershim Blvd.
(1 Block N. of Universal Studios)
(818) 760-4430

West Covina
544 Azusa Ave.
(1 Block N. of the 10 Freeway)
(818) 967-5767

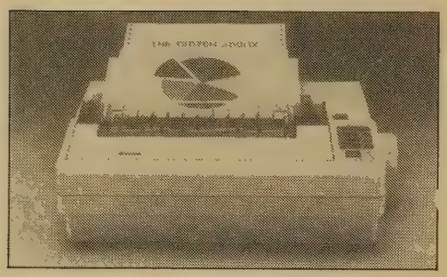
Sherman Oaks
4631 Van Nuys Blvd.
(2 Blocks N. of Ventura Blvd.)
(818) 784-6900

PRODUCT SPOTLIGHT

New Color Products

CITIZEN CONNECTS THE DOTS IN COLOR

Billed as the "next generation" 9-wire printer, the Citizen 200GX offers a host of advanced features, including Command-Vue II front panel control, Color On Command color option and improved paper handling capabilities. This new printer offers 312 cps (10 cpi) and 40 cps (near letter quality).

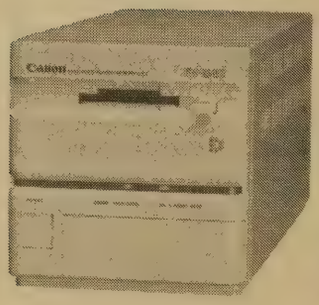


From students to executives in the home office, the 200GX is designed so that anyone can quickly master its many functions. The Command-Vue II front panel control with a menu slide switch enables anyone to easily select from more than 25 printer functions, including print color with seven colors, five resident fonts, and top-of-form adjustments.

Users can easily switch between continuous paper and single sheet feed. The convertible push/pull tractor, with rear and bottom feed slots, allows the user to determine the best position from which to advance letterhead, fanfold pater, forms, labels and transparencies. ($299) Citizen America Corporation, 2401 Colorado Ave., Suite 190, Santa Monica, CA 90404. (213)453-0614.

CANON AND ALDUS JOIN FORCES FOR COLOR IMAGE INPUT

Canon has joined with Aldus for a new color-image input system for Macintosh-generated documents. The system permits fast, easy incorporation of still-video color images into documents, and was specially designed for use in color-separation work and composite printing.



The system is built around the new Canon FV-540 Video Floppy Disk Drive, a combination still-video player and color digitizer. The hardware FV-540 in conjunction with Aldus software can convert analog images stored on a 2" still-video floppy disk into digital images. The software includes Aldus Pagemaker, Aldus PrePrint and an Aldus interactive driver for the FV-540.

After shooting pictures on a still-video camera, the images can immediately be brought into the system without waiting for further processing. The Canon FV-540 can convert an image captured on a still-video camera into a full-color digitized picture of up to 640 x 480 pixels at 24 bits per pixel.

Using Aldus PageMaker, the images can be incorporated into a publication, which can then be printed directly from PageMaker or stored on a disk as a PostScript file.

To create color separations, PrePrint links the PostScript file with images and generates four-color separations or color composites of the entire publication. Images can be adjusted in PrePrint for color saturation, contrast, brightness and sharpness. Highlights, midtones and shadow can be enhanced, and color casts corrected. Canon USA, Inc., One Canon Plaza, Lake Success, NY 11042. (516)488-6700.

NIKON LS-3500 FILM SCANNER FOR COLOR SLIDES

The Nikon LS-3500 Film Scanner offers easy-to-use image scanning for both color and monochrome 35mm

PRODUCT UPDATES

- QMS has extended the warranty on the ColorScript 100 Model 10 from a 90 days return to factory to a one-year return to factory warranty
- Cheyenne Software has released a new version of The Organization Analyst, a sophisticated software tool used for corporate restructuring. The new version 2.0 contains 23 performance and functional enhancements.
- Innovative Data Design, a leading developer of precision drawing and design software for Apple Macintosh computers, has shipped MacDraft 2.0, the company's most popular drawing and design software. The new version includes full Mac II color support, custom fill patterns in black and white or color, editing of colors and patterns, on-line symbol libraries, and more.
- WordPerfect is now offering WordPerfect Office Editor 3.0 as a separate product. The company is releasing Editor 3.0 prior to the release of WordPerfect Office 3.0 because of requests for an enhanced macro editor to support WordPerfect 5.1 macros.
- Recital, a relational database management system and language package, has been enhanced to provide dBASE IV language compatibility. Recital 6.3 offers more than 100 enhancements, including compatibility with dBASE IV and improved compatibility with Clipper Summer '87 and improved FoxBASE 2.1.
- Silicon Beach Software announced version 2.1 of Super 3D, the three-dimensional modeling and animation program. In addition to VersaCAD file conversion, version 2.1 adds support for 32 bit QuickDraw. This release will be mailed free to all 2.0 registered users.
- Microlytics, Inc., the publisher of Word Finder electronic thesaurus, has introduced Word Finder Plus. The new program is an integrated multiple language spell checker and thesaurus that allows users to switch between UK English, German, and French with a single keystroke. Additional languages, including Spanish and Italian, will be available as separate add-on packages.

MOTHER'S DAY SPECIALS

IBM

PS II Model 25 Mono/Color.....$999/1150
PS II Model 25 M/C + 20 MB HD.....1395/1630
PS II Model 30 1 Dr. + 20 MB/40 MB....1395/1595
30-286E01/21/31 MB HD.....1375/1695/1795
PS II Model 50Z-31/50Z-60 MB.....1895/2095
PS II Model 55SX-30 MB/60 MB.....2595/2945
PS II Model 60-44 MB/70 MB.....2995/3395
PS II Model 80-111/300 MB.....4895/6395
PS II Model 80-44/70 MB.....3495/3950
PS II Model 70-E61/E121.....3395/3795
PS II Model 70-A61/A21 25 MHz.....CALL/5695
PS II Model 70-061/120 MB HD 20 MHz..3695/4095
PS II Portable 73-061/P73-121 MB HD....5095/5495

80A21/80A31.....AVAILABLE
65SX-60/65SX-121.....CALL FOR
70B61/70B21.....PRICING

Mono Display 8503/XT STYLE.....199/189
Color Display 8512/8513.....439/519
8514 Monitor/8514/A...Adapter.....1130/920
Pro Printer II/III/IIIXL.....369/435/510
Pro Printer X24/XL24E/IIXL.....495/689/460
Quiet Writer II/III.....695/1095
IBM DOS 4.0/3.3/3.2.....113/82/55

CALL FOR ALL OTHER
IBM PRODUCTS

Seagate

SEAGATE HARD DRIVES
20 MB ST 125/30 MB ST 138R.....$229/249
30 MB ST 138/40 MB ST 157R.....275/389
20 MB/30 MB w/Controller.....229/269
30 MB/40 MB (4038/4051).....375/420
40 MB ST251-1 28 MSC.....309!
80 MB (4096)/65 MB (277R).....559/475

MINISCRIBE
40 MB (3650)/40 MB (3053).....$279/395
40 MB (6053)/80 MB (6085).....345/495
80 MB (3085)/300 MB (9380).....595/1495

D-DATA HARD DISK CARDS
20 MB/30 MB for XT.....$345/399
40 MB CARD F/XT 40 MSC.....595
20 MB/30 MB for PS/2.....399/435

MISCELLANEOUS
COMPAQ 300 MB HD.....$2295
COMPAQ PORTABLE 20 MB.....495
COMPAQ 40/60 MB F/DP386.....595/795
10/20 MB IBM HARD DISK.....125/250
100/200 MB HD FOR COMPAQ.....950/CALL
ALL IBM PS II HARD DRIVES.....IN STOCK

COMPAQ

DESKPRO MODELS
New 286E Model 1/20/40.....$1745/1975/2150
286 Model 1/20/40 Factory.....1495/1895/2195
386-25 MHz/20E 60 MB HD.....5095/3595
386-25 MHz 110/300 MB HD.....5695/6995
386S Model 1/20/40 MEG.....2195/2395/2550
386/20E Model 1/40/110.....3195/3595/4195
386S/386 20E Model 100 MB HD.....2895/3895
386 33 MHz 84/320/650 HD.....7195/9495/11599

PORTABLES
New Compaq LTE's.....In Stock
386/40 MB HD, 1.2 Fl, 1 Meg.....$4695
386/100 MB HD, 20 MHz.....5195
II Model 4 (Factory/Upgrade).....2495/2295
III Model 20 MB...1.2 Fl, 640K.....3295
III Model 40 MB...10 MHz.....3695
SLT 286 Model 20/40 MB HD in stock....3595/3895
Compaq Amber/Green.....195
C.40 MB TBU F-Portable/Deskpro.....750/595
Compaq VGA Adapter/Monitor.....385/525
Compaq DOS 4.0/3.3/2.1.....115/85/45
P. III 386 1200/2400B Modem.....225/415
Portable III-386 Expansion Chasis.....169

System Pro & 486/25
Call for pricing!

IBM MEMORY UPGRADES

PS/2 30-286 512/2 MB.....$99/345
PS/2 50Z/55SX 1 MB/2 MB.....265/395
PS/2 70-E61 and 70-121 1 MB/2 MB.....265/395
PS/2 70-A21 2 MB.....695
PS/2 80-041 1 MB.....245
PS/2 80-111 and 80-311 2 MB.....695
PS/2 MOD. 70/80 2-6 MB MEMORY BOARD..1095
PS/2 MOD. 70/80 2-8 MB MEMORY BOARD..1095
PS/2 MOD. 50/60 512K-2 MB MEMORY BOARD 395

SPECIALS FOR LIMITED TIME

Macintosh

Mac SE 2 Dr/20 MB HD..$1770/1985
Mac SE/30 40/80 MB HD....2985/3695
Mac IIx 40/80 MB HD.....3925/4875
Mac IIcx 40/80 MB HD.....3595/4875
Mac II Video Card 4 bit/8 bit....395/495
Imagewriter II/Laser
Writer II NT.....415/3295

COMPAQ MEMORY UPGRADES

DESKPRO 386/33 MHz 2 MB Kit.....$495
DP 386/20, 25 1MB/4MB Mem Module.....269/595
DP 386/16 1 MB/1-2 MB/4-8 MB.....295/520/1495
DP 386/20E 1 MB/4 MB Mem Board.....329/795
DP 386S 1 MB/4 MB Mem Board.....329/795
PORTABLE 386 1 MB/4 MB.....395/1395
PORTABLE SLT/286 1 MB.....395
PORTABLE III 512K/2 MB.....169/495
DESKPRO 286E 1 MB/4 MB.....469/1369

intel

8087-3 XT/80287-6 AT.....**$79/119
8087-2 XT/80287-8 AT.....119/199
80C287A/80287-10.....279/229
80387-20/80387-16SX.....369/319
80387-25/80387-33.....469/569

OKIDATA

172/182 Turbo.....$195/239
Okidata 183 Wide Carriage.....295
292/293E 240 cps, 100 nlq.....389/499
320/321 300 cps, 62 nlq.....329/459
390/391 24 pin 270, 90 nlq.....459/619
393/393 COLOR 450 cps.....955/1029
Lazer Line 6.....1199

EXTERNAL FLOPPY DISK DRIVES

5¼" 360K/1.2MB F-PS/2.....$125/229
3.5" 1.44MB for XT/AT.....295
5¼" 1.2 F/Compaq SLT.....295
5¼" 1.2 F/Toshiba.....299
Irwin 20 MB Ext/Internal T.B.U....295/235
CALL FOR ARCHIVE, TECMAR, SYSGEN

TOSHIBA

321SL/341SL (216 CPS).....$429/595
351-SX/301/311.....919/309/349
Toshiba T1000/T1000SX.....635/1165
T1200HB/FB.....1850/1350
T1600 20/40 MB HD.....2689/2952
T5200-40/100 MB HD.....4595/4995
T1000XE/T1200XE.....CALL
T3100SX/3200SX.....3554/3750
TOSHIBA 5100-40/100.....3875/4350

HEWLETT PACKARD

LASERJET SERIES II/IIP.....$1569/969
LASERJET SERIES IID/NEW III...2395/1560
DESK JET/DESK JET +.....569/649
1MB F/HP II COMPATIBLE/HP.....259/349
2MB F/HP II COMPATIBLE/HP.....389/495
HP PLOTTER 7475A/QUIET JET..1395/629
SCANJET + W/INTERFACE.....1450
HP PAINT JET/THINK JET.....999/410
PD. 25 IN 1/JETFONT 150 IN 1.....279/279

NEC

PROSPEED 286-20/40/
100 MB HD.....$2695/2800/3890
MULTISYNC IIA/IIID/Plus.....469/595/825
MULTISYNC XL/5D.....1795/2295
NEC LC890 LASER.....3195
PROSPEED 386-40/100 MB HD...3695/4250

LOTUS 1-2-3 $289

Hard Card Plus 20 MB.....$345

PAGE COMPUTER

1779B Westwood Blvd., Los Angeles, CA 90024
Tel (213) 444-0055 Fax (213) 444-9095

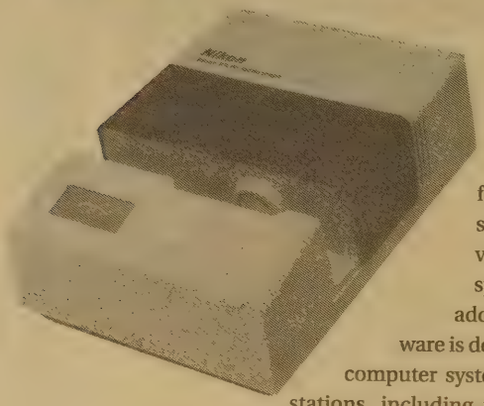
1-800-266-0055

SERVICE & REPAIR CENTER ON ALL MAJOR BRANDS
IBM • Compaq • Toshiba
Epson • Okidata • And Many More!
Computers • Printers • Hard Drives
Call for a free estimate!

There will be a charge on all credit card purchases.
UP TO 2% discount on all pre-payments.

AMEX MC VISA

PRODUCT SPOTLIGHT



film. The simple command structure, in ASCII codes, provides flexibility through specifying the parameters. In addition, the hardware and software is designed for all major desktop computer systems and engineering workstations, including the Apple Macintosh, IBM (and compatibles), and UNIX operating systems.

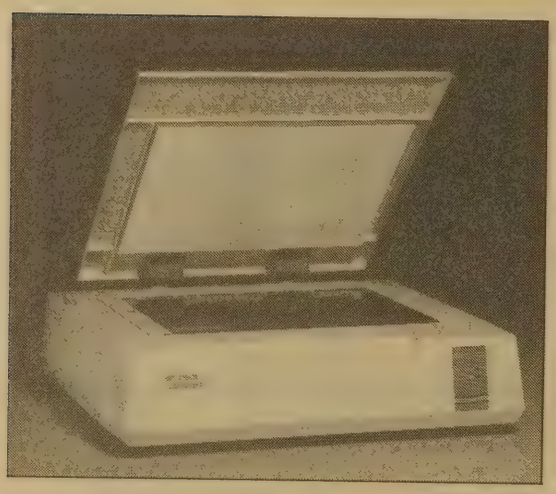
The LS-3500 reads directly from positive or negative film with accurate reproduction. Red, blue and green are each sampled in 8-bit code to provide 256 color gradations. Sequential scanning of the three color screens produces more than 16.7 million colors. With 4096 x 6144 pixels over a 24mm x 36mm area, the reproduced images have perfect color registration and ultra-high definition.

Small enough for desktop use, the LS-3500 measures 11.3" x 15.1" x 5.6" and weighs only 15.4 lbs. for easy portability to other workstations. The suggested retail price is $9995; software for either a Macintosh or IBM computer is $770. Nikon, Inc., 623 Stewart Ave., Garden City, New York, NY 11530. (516)222-0200.

COLOR IMAGE SCANNING MADE EASIER AND MORE COMPATIBLE

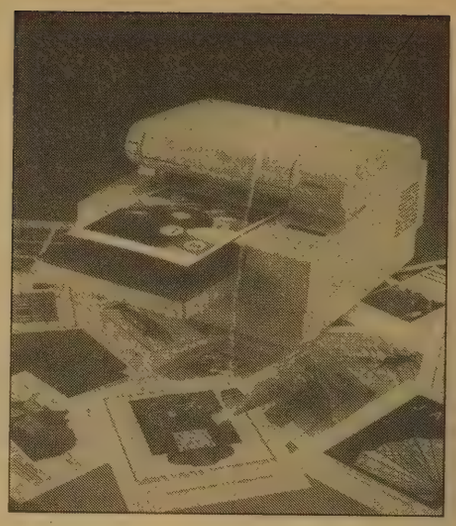
Mitsubishi has expanded the compatibility and application capability for their high resolution SC-7500 Full Color Image Scanner. This will make the SC-7500 compatible with Apple Macintosh, Sun Microsystems and all leading hardware and graphics software packages.

With the SC-7500 you can selectively scan a fixed input area and orientation or specify any deviation from the fixed area. To further enhance the selective scanning features, templates may be created and stored for frequently used areas. These features will speed up the image scanning process.



The new software has a preview function that allows the user to selectively edit for color or other enhancements and changes. The four sharpness settings—normal for line art and text, sharpened for continuous tone images, exaggerated for increased sharpening and soft for high resolution of halftone images—also allow for increased control of the images.

The Full Color Image Scanner SC-7500 is compact—requiring no more space than the desk top area it occupies. ($8950) Mitsubishi International Corporation, Computer Graphics Department, 701 Westchester Avenue, White Plains, NY 10604. (914)997-4976.



OCÉCOLOR OFFERS A CERTIFIED FULL PALETTE

The OcéColor color PostScript printer, offering Pantone-certified full-color output, was featured recently at the Spring 1990 MacWorld Expo in San Francisco.

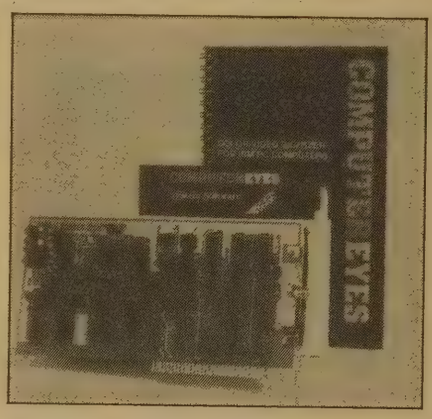
As easy to install as a monochrome laser printer, the OcéColor prints true Adobe PostScript images in Pantone-certified colors on paper or overhead transparency film. It supports Apple's Quickdraw and 32-bit Quickdraw.

Developed for graphic arts, desktop publishing, page layout and presentation graphics applications, the OcéColor is the smallest, lightest and quietest color PostScript printer available. The machine measures 9.9" x 16.1" x 17.5" and weighs 42 lbs.

A wax-based thermal process gives a print resolution of 300 dpi. Ink and media changes are made with a drop-in ink roll and a 100-sheet media cassette. Three standard interfaces enable direct or network connections to Macintosh, PC and workstation platforms. ($10,990) OcéColor Graphics USA Inc., 385 Ravendale Drive, P.O. Box 7169, Mountain View, CA 94039-7169. (415)964-7900. FAX (415)961-6152.

COMPUTEREYES OPENS A NEW PROFESSIONAL SERIES

Digital Vision has released a new full-color Professional Series ComputerEyes video digitizer offering an economical means to capture images on IBM PC and compatible computers.



ComputerEyes/Pro offers high resolution image capture (640 x 480) from any standard (or Super-VHS or Hi-8) camcorder or VCR at up to 24-bit (16 million color) palette depth. Images are displayed with the PCs standard EGA, VGA, or Super-VGA graphics capabilities, requiring no addition hardware.

The Pro series is expected to find broad application in desktop publishing and color pre-press, with image databases, paint and animation programs, and in the rapidly growing market for corporate electronic presentation technologies.

This series was designed with integration in mind. A developers software kit is available that offers developers the ability to easily incorporate image scanning capabilities directly into their applications. ($449.95) Digital Vision, Inc., 270 Bridge Street, Dedham, MA 02026. (617)329-5400.

EVERY DAY LOW PRICES!!

PC/XT

10 MHZ PC/XT System Board
With 640 K on Board, 8 Slots
Turbo Style AT Jr. Case
w/Reset Switch
150 Watt Power Supply
Keyboard (84 or 101)
2 360K Floppy Disk Drives
w/5 Function I/O Card
Monochrome or Color
Graphics Card
With Parallel Port

ONLY

$490.00

PC/AT

10 MHZ 80286 System Board
With 640 K on Board
AT Jr. Case
200 Watt Power Supply
Keyboard (84 or 101)
One 1.2 Meg 5.25" Drive
WA6 Hard/Floppy Controller 1:1 Int.
AT I/O Card With
Parallel, Serial & Game Ports
Monochrome or Color
Graphics Card
With Parallel Port

$750.00

12 MHZ $800.00

80386 FULLY COMPATIBLE COMPUTER

25 MHZ 80386 System Board
With 8 Slots
1 Megabyte RAM on Board
Full Size Case With Reset,
Turbo Switch, Power Light & Key
230 Watt Power Supply
Keyboard (84 or 101)
One 1.2 Megabyte Floppy Disk Drive
WA6 Hard/Floppy Controller 1:1 Int.
AT I/O Card With Parallel Port,
Serial Port & Game Port
Monochrome or Color Graphics Card
With Parallel Port

$1500.00

25 MHZ w/2 MEG RAM $1700

ALL SYSTEMS FULLY ASSEMBLED AND TESTED WITH 1-YEAR WARRANTY, PARTS AND LABOR

HARDWARE

Floppy Drive Controller, 2-Dr./4-Dr.	$15.00/$ 25.00
Monochrome Amber Monitor	$ 70.00
Color Monitor (640 x 200)	$190.00
NEC 3D Multisync Monitor	$625.00
CTX VGA-L Monitor (1024 x 768)	$425.00
EGA Monitor (640 x 350)	$305.00
VGA Monitor (640 x 480)	$325.00
Monochrome Graphics Card w/Parallel Port	$ 36.00
Color Graphics Card w/Parallel Port	$ 36.00
EGA Card (640 x 350)	$128.00
Multisync Card (800 x 600)/VGA (640 x 480)	$180.00
20-Meg. Hard Drive w/Controller ST-225 MFM	$265.00
20-Meg. Hard Drive 40 MS ST-125 MFM	$225.00
30-Meg. Hard Drive w/Contr. ST-238R RLL	$280.00
30-Meg. Hard Drive 40 MS ST-138 MFM	$315.00
40-Meg. Hard Drive 28 MS ST-251-1 MFM	$360.00
80-Meg. Hard Drive 28 MS Access ST-4096	$575.00
Hard Drive Controller for XT Controls MFM	$ 52.00
Disk Drives: 360K/1.2 Meg	$57.00/$ 76.00
720K/1.44 Meg.	$70.00/$ 80.00
WD 1006: Hard/Floppy 1:1Interleave	$125.00
Hard/Floppy Controller for AT (WA6) 1:1 Int.	$ 90.00
Disk I/O: Parallel, Serial, Game, Clock, FDC	$ 35.00
I/OS Card: Parallel, Serial, Game, Clock	$ 35.00
Multi Disk Controller: 360K, 720K, 1.2, 1.44.	$ 45.00
10-MHZ XT Motherboard	$ 60.00
10-MHZ AT Motherboard	$190.00
12-MHZ AT Motherboard	$220.00
AT JR Case	$ 28.00
Full Case	$ 55.00
Vertical Case	$200.00
Keyboard (AT Style) 84-Key	$ 30.00
Keyboard (12 Function Keys on Top) 101-Key	$ 35.00
Power Supply 165-Watt/200-Watt	$36.00/$ 42.00
Serial Card/Parallel Card	$13.00/$ 12.00
AT I/O Card: Parallel, Serial, Game	$ 28.00
Game Card (2 Ports)	$ 10.70
MS/DOS 4.01 or 3.3	$ 72.00
Logitech Hi-Rez Bus Mouse/Serial	$ 82.00
Pro Tech Mouse	$ 30.00
Geni Scan w/OCR Software	$250.00
Logitech Hand Scanner (400 DPI)	$175.00
Logitech Paint Show Plus	$ 20.00

SMALL FOOTPRINT
286-12 MHZ SYSTEM

1 Megabyte on Board
1.2 Meg. 5.25" Drive
Includes 3.3 DOS
101 Enhanced Keyboard
Mono or Color Graphics Card

$759

PRINTERS

CITIZEN

120D - 120 CPS	$145.00
180D - 180 CPS	$165.00
MSP-15E - 160 CPS Wide	$330.00
GX-200	$190.00
GSX-140 Color on Command, 24 pin 2-year Warranty	$325.00
Color Kit for Above	$ 60.00

STAR

NX-1000 II - 180-CPS Draft	$170.00
NX-1000R - 7 Color	$220.00
NX-2400 - 24-Pin	$325.00

PANASONIC

1180	$185.00
1124 - 24-Pin	$340.00
1624 - 24-Pin - 132 Column	$525.00

PUBLIC DOMAIN & SHAREWARE

OVER 2400 TITLES **$1.00** PER DISK

MODEMS

1200 Internal w/ProComm	$ 60.00
2400/1200/300 Internal w/ProComm	$ 90.00
2400 Baud External	$105.00
9600 Baud External	$600.00

RAM CHIP SALE

64-150ns	$1.75
64-120ns	$2.00
64-100ns	$2.25
256-150ns	$4.25
256-120ns	$4.75
256-100ns	$5.00
4464-120ns	$5.00

DISKETTES

Certified 100% Error Free - LIFETIME WARRANTY

DS/DD w/Tyvek Sleeves	$ .25
Colored 3.5" DS/DD	$ .85
3.5" DS/HD	$1.75
Color DS/DD - 15 Colors w/Sleeves	$ .43
Color DS/HD - 15 Colors w/Sleeves	$ .75
DC2000	$17.50
DC600A	$23.00
DC300XLP	$22.00

RIBBONS

	BLACK	COLOR
Citizen 120D, 180D	$ 3.50	$4.50
Commodore 801	$ 3.00	
Commodore 803	$ 3.00	
Diablo Hytype II M/S	$ 2.10	
Epson LX80	$ 2.25	$2.75
Epson MX, FX, RX-80, 85	$ 2.40	$3.00
Epson MX, FX, RX-100, 185, 285	$ 3.25	$4.25
Epson LQ800	$ 3.00	$3.50
Epson LQ1000	$ 3.50	$4.00
Epson LQ2500/LQ2550	$ 4.50	
Epson EX800/1000	$ 3.75	$5.25
IBM Proprinter X24	$ 3.50	$4.00
IBM Proprinter XL and XL-24	$ 4.50	$5.00
Imagewriter, Citoh Prowriter	$ 2.25	$3.00
Imagewriter II 4 Color	$ 5.50	
NEC P2200	$ 4.75	
NEC P5200 Nylon	$ 6.00	
Okidata 80, 82, 92, 93	$ 1.10	$1.40
Okidata 182, 183, 192, 193	$ 3.25	$3.75
Okidata 393	$14.75	
Panasonic 1090, 1091, 1092	$ 3.25	$4.25
Panasonic 1124	$ 5.00	
Panosonic Kx-P1524	$ 5.00	
Radio Shack DMP 130	$ 3.40	$4.25
Star Gemini 10X, 15X	$ 1.10	$1.40
Star NX-10, NL-10, NP-10	$ 3.25	$4.00
Star NX-1000	$ 3.25	$4.00
Star NX-1000R 4 Color Branded	$10.00	
Tally Spirit 80	$ 3.75	
Toshiba P1340, P1350, P1351	$ 3.00	$3.50
Toshiba P321SL, P341SL	$ 4.75	$5.25
Toshiba 351SX	$ 5.25	

THESE ARE BRAND NEW RIBBONS (NOT REFILLS) AND MADE TO MANUFACTURER'S SPECIFICATIONS

WE CARRY OVER 200 RIBBONS
CALL FOR OTHER RIBBON PRICES

WE CARRY COMPUTER & FAX PAPER

Edutech Voice Card
$150.00
New American Standard Bible
$89.00

VISA MasterCard DISCOVER

COMPUTERS, PRINTERS, AND IBM PARTS REFLECT 3% CASH DISCOUNT

Data Dynamics

3715 South Street
Long Beach, CA 90805

PRICES ARE CLUB MEMBER PRICES
MEMBERSHIP IS $5.00/YR.
NON-MEMBERS PAY 10% MORE

Monday thru Saturday 9:30 a.m. to 7:00 p.m. – Closed Sunday

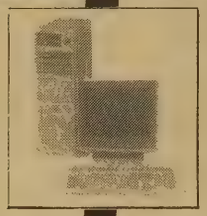
(213) 602-0946
FAX (213) 602-0969

PRICES AND CONTENTS SUBJECT TO CHANGE WITHOUT NOTICE

WE DO NETWORKING: CALL For Best Service & Price!

COMPLETE 386 20/25 MHz SYSTEM

- 386 20 MHz, 0 wait state
- Deluxe AT case
- 230 Watt power supply
- 8/20 MHz System speed
- 80386-20 CPU
- Clock/Calendar built-in
- 2 Serial/parallel/game port
- Socket for math chip
- 1 MB RAM Installed, up to 8 MB
- FDD/HDD 1:1 Interleave controller
- Amber Monitor
- 1.2 MB Floppy drive
- Hercules graphics compatible card
- 101 Enhanced keyboard



$1295

SUPER 386 25 MHz

- AT Desktop deluxe case
- 230 W Power supply
- 386/25 MHz motherboard, 0 wait state
- 1 MB 80 ns memory installed exp. to 8 MB
- Intel true 32 bit CPU
- 1 32 bit, 5 16 bit & 2 8 bit slots
- Socket for 80287 or 80387
- AMI bios
- 2 Serial, 1 parallel port, 1 game
- 1:1 Interleave HD/FD controller
- 1.2 MB or 1.44 MB floppy drive
- 360K or 720K floppy drive
- 72 MB Micropolis Hard Drive
- VGA monitor w/card
- Enhanced deluxe 101 key keyboard
- MS DOS 3.30 or 4.01
- OS/2, UNIX, Novell compatible
- Technical reference manual

$2265

NETWORKING
20 MHz 386 NETWORK SYSTEM

FILE SERVER-386/20 MHz

- 1 20 MHz 386 Motherboard
- 1 2 MB RAM
- 1 1.2 MB Floppy DD
- 1 FDD/HDD 1:1 Interleave controller
- 1 80 MB HDD (28ms)
- 1 Arcnet card
- 1 12" Amber monitor
- 1 80 Column card MGP
- 1 101 Keys enhanced KB

FREE ESTIMATES!

WORKSTATIONS-286/12 MHz

- 2 12 MHz AT
- 2 640K RAM
- 2 Arcnet card
- 2 1.2 Meg FDD
- 2 80 Column MGP card
- 2 12" Amber monitor
- 2 101 Keys enhanced KB

NETWORK INTERFACE

- 1 Novell ELS Netware II
- 3 RG-62 Cables (25 feet each)
- 1 4-Port passive HUB

$4995

NOVELL SYSTEM INSTALLATION AND ALL HARDWARE ASSEMBLY INCLUDED + 3 MONTHS ON SITE SERVICE

CAD SYSTEM

- Deluxe AT case
- 230W power supply
- 386/25 MHz MB w/CPU, 0-wait state
- 64K cache memory
- AMI Bios
- 1 MB 80ns memory installed, exp. to 16
- Auto rechargeable battery
- (6) 16 Bit & 2 (8) bit slot
- Math coprocessor 80387
- SIMM/DRAM socket
- Clock/calendar built-in
- 2 Serial/parallel/game port
- 72 MB Micropolis hard drive
- 1:1 Interleave HD/FD controller
- 1.2 or 1.44 MB Floppy drive
- 360 or 720 MB Floppy drive
- 16 Bit VGA card
- VGA Monitor (.31 mm)
- 101 Key keyboard

$2995

i486 NOW AVAILABLE! Call For System Configurations

20 MB HARD DISK w/Every System Purchase Add $150

COMPLETE AT 286 TURBO

- 286 Mainboard, 0 wait state
- Deluxe AT case w/LED/keylock/button
- 230 Watt power supply
- 6/12 MHz Dual speed
- 80286-12 CPU
- Clock/calendar built-in
- 80287 Math Co-processor socket
- 512K RAM Installed-exp. up to 4 MB
- FDD/HDD Controller
- 1.2 MB Drive
- Hercules compatible graphics card w/printer port
- TTL Amber monitor (720x350)
- 101 Enhanced keyboard

$655

COMPLETE AT 386SX SYSTEM

- 386SX Mainboard, 0 wait state
- Deluxe AT Case
- 230W power supply
- 80386 SX Intel
- 1 MB Memory installed, Exp. to 8 MB
- FDD/HDD Controller
- 1.2 MB Drive
- 2 Serial/1 parallel/1 game port
- TTL Monitor
- Hercules compatible graphics w/printer port
- 101 Enhanced keyboard

$845

ACCESSORIES

Mini-Tower case w/digital display	$105
VGA Monitor + card	375
ST 251-1 40 Meg (28ms)	290
Conner 344 40 Meg (28ms)	320
Micropolis 1335 72 Meg	595
Maxtor LXT 200AS 200 Meg (16ms)	999
360K 5¼ inch drive	59
720K 3.5 inch drive	69
1.2M 5¼ inch drive	72
1.44M 3.5 inch drive	75
CDC 65MB HDD	275

ACCESSORIES

150 MB	CALL
330 MB	CALL
Printer stand (plastic)	$5.50
Printer stand (oak)	7.50
FDD/HDD Cable	4.99
Diskette holder w/keylock (100 pcs)	7.95
2400 Baud modem (Made in U.S.A.)	69
Logitech serial mouse hi-res	75
Power center	19
230W Power supply	47

PRINTERS

Panasonic 1180	$185
Panasonic Laser 4450	1350
Panasonic 1124	285

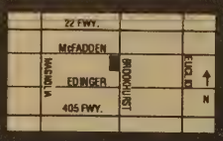
CALL FOR MEMORY CHIPS, PRINTERS OR ANY OPTIONS. WE ALSO OFFER SERVICE, REPAIR AND UPGRADES. SERVICE AND MAINTENANCE CONTRACTS AVAILABLE FOR COMPANIES AND HOME USERS.

MAINBOARD

8088-10	$65
AT 80286-12 MHz (VLSI)	135
AT 80286-16 MHz	200
AT 80386SX-16 MHz	320
AT 80386-20 MHz	375
AT 80386-25 MHz	CALL
AT 80386-33 MHz	CALL
AT 80486-25 MHz	CALL

ONE YEAR PARTS & LABOR WARRANTY ON ALL SYSTEMS

COMPUPLUS INC.
15569 Brookhurst Street
Westminster, CA 92683
TEL: (714) 775-0261
FAX: (714) 775-0264

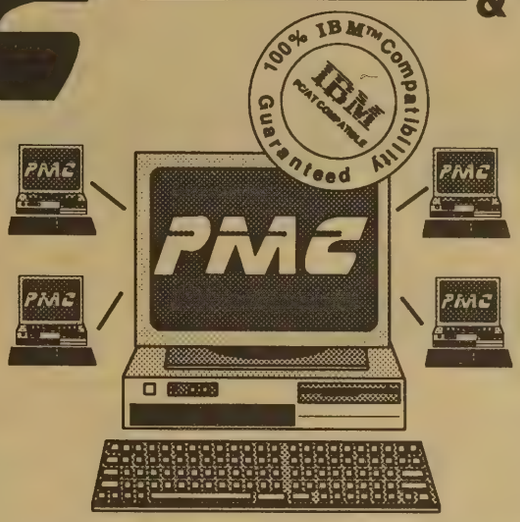


7 Days A Week—9:00 a.m. to 9:00 p.m.
"Wholesale & Retailer" All prices shown reflect a 3% cash discount.

LOGICACHE COMPUTERS, INC.
22691 Lambert St. Suite 505
El Toro, CA 92630
TEL: (714) 855-1211
FAX: (714) 855-3892

6 Days A Week—9:00 a.m. to 7:00 p.m. Mon.-Fri.
10:00 a.m. to 4:00 p.m. Sat.
PRICES SUBJECT TO CHANGE WITHOUT NOTICE.

PMC Computer Systems & Networking Solutions



PMC 286-12 MHZ

- Intel 80286 12 Mhz CPU
- 512K RAM
- Zero Wait State
- 1.2 MB Floppy Drive
- One Serial And Parallel Port
- Two Port Floppy Disk Controller
- Co-Processor Socket
- 101 Key Enhanced Keyboard
- High-Res Amber Display with compatible graphics adaptor
- AT case Power Supply

COMPLETE
NO HIDDEN COSTS!
$575

PMC 386-SX-16 MHZ

- Intel 386SX 16Mhz CPU
- Full 1 MEG RAM
- Zero Wait State
- 1.2 MB Floppy Drive
- One Serial and Parallel Port
- Two Port Floppy disk controller
- Co-Processor Socket
- 101 Key Enhanced Keyboard
- High-Res Amber Display with Compatible Graphics Adaptor
- AT Case Power Supply

COMPLETE
NO HIDDEN COSTS!
$795

714-727-7086

NEC Panasonic EPSON SEIKO

PMC 386-20

- Intel 80386 20Mhz CPU
- Full 1 MEG RAM
- Zero Wait State
- 1.2 MB Floppy Drive
- One Serial and Parallel Port
- Two Port Floppy disk controller
- Co-Processor Socket
- 101 Key Enhanced Keyboard
- High-Res Amber Display with Compatible Graphics Adaptor
- AT Case Power Supply

COMPLETE
NO HIDDEN COSTS!
$1195

PMC 386-25 MHZ With 64K CACHE

- Intel 80386 25Mhz CPU
- Full 1 MEG RAM
- Zero Wait State
- 1.2 MB Floppy Drive
- One Serial and Parallel Port
- Two Port Floppy disk controller
- Co-Processor Socket
- 101 Key Enhanced Keyboard
- High-Res Amber Display with Compatible Graphics Adaptor
- AT Case Power Supply
- U.S. Made System Board

COMPLETE
NO HIDDEN COSTS!
$1548

PMC 386-33 MHZ With 64K CACHE

- Intel 80386 33Mhz CPU
- Full 1 MEG RAM
- Zero Wait State
- 1.2 MB Floppy Drive
- One Serial and Parallel Port
- Two Port Floppy disk controller
- Co-Processor Socket
- 101 Key Enhanced Keyboard
- High-Res Amber Display with Compatible Graphics Adaptor
- AT Case Power Supply
- U.S. Made System Board

COMPLETE
NO HIDDEN COSTS!
$1995

UPGRADES MATRIX

"Add to Above System Prices"

	Monochrome	VGA	Super VGA	Seiko VGA
NO N.D.	Standard	$375	$535	$795
40MB	$395	$770	$930	$1190
100MB	$695	$1070	$1230	$1490
150MB	$1120	$1495	$1655	$1915

NETWORKING

PMC OFFERS:

- NOVELL INSTALLATION & SUPPORT
- LOW COST "PEER TO PEER" SOLUTIONS
- TRAINED NETWORK DESIGN SPECIALISTS
- TELECOMMUNICATIONS FOR REMOTE NODES

EXPANDED SHOWROOM

VISIT OUR EXPANDED SHOWROOM AND SELECT SYSTEM TAILORED TO YOUR NEEDS

PMC Computer Systems
15375 BARRANCA PARKWAY SUITE #G101
IRVINE, CALIFORNIA 92718
BUS (714) 727-7086
FAX (714) 727-3714

VISA® MasterCard

FINANCING AVAILABLE
STORE HOURS
M-F 10-7 & SAT 10-3

Reviews

All in all, Impress nicely done, integrates with 1-2-3 seamlessly, and allows you to work in whatever mode you desire...

GRAPHICS

IMPRESS

Published By: PC Publishing
Suggested Retail: $149.95
Reviewed By: Woody Liswood

A few months ago I wrote a rave review about Allways, a program which enhances Lotus 1-2-3 worksheets so that they print the way you want them, using multiple fonts, lines, boxes and other such goodies. However, after working with a recent competitor called Impress, I switched all of my work to Impress. In my opinion, not only does it do the same thing, it does it better and easier.

One main difference is that with Impress you can work either in the normal display mode of 1-2-3 or in the Impress mode. With Allways, you could set your display and printing up in Allways mode, but you had to work on the spreadsheet in its normal display mode. By letting you work in the spreadsheet in either mode, Impress makes your work much easier; it eliminates continuous switching back and forth. It is a WYSIWYG workhorse.

Impress's handling of page breaks is especially nice. If you have rather large worksheets, as I have, you sometimes would like to print areas a certain way. Rather than write a printing macro to print section by section, with Impress you can put both vertical and horizontal page breaks wherever you like; when you print the entire area, the pages come out the way you want.

Impress allows eight fonts to be used at any one time, along with bold, italics, and underlines. There are four shading values as well as eight colors for background and characters. If you use a PostScript printer, you can get additional shadings, since the PostScript driver interprets the colors as variations on dot patterns and shading. And, as you might expect, Impress also lets you box cells in any manner you choose.

Impress works with CGA, EGA, VGA and Hercules displays. I tried it with all of the displays and found that CGA was very difficult to read and work with in Impress mode, but I could read the characters in all the other modes. It requires Lotus 1-2-3 2.0 or greater. I also used Impress with Lotus 2.2 and it ran fine out of the box. It does not work, in its present form, with 3.0.

I also created some printing macros to run in Impress mode, and had no problems, so it looks like the Impress integration with the spreadsheet is seamless.

There are a few minor problems. The on-screen display of proportional fonts does not match up with the printed page if you are doing paragraphs and long lines of type. If you are doing critical text work with Impress, you probably will need to check the printing

EVEREX STEP

VISA MasterCard

EVEREX STEP: CALL! 386 20/25/33 MHz

286 TURBO 12 MHz

- Kyocera 3.5" 20MB 62ms Hard Disk
- 14" Flat Screen Paper White monitor
- 80286-12 MHz motherboard w/12 MHz CPU
- Actural Performance at 16.0 MHz
- 1MB 80ns ram installed (4MB max.)
- PS/2 style case w/LEDs, reset, keylock
- Super quiet 200W power supply
- WA3 16MHz Hard & Floppy Controller
- One Teac 1.2MB Drive
- Hercules compatible monographics card
- Printer port
- Enhanced 101 keyboard
- Clock/Calendar with battery

$895.00

- Upgrade to 40 MB Western Digital $125.00
- Upgrade to 40 MB NEC 195.00
- Upgrade to 80286-16 MHz 100.00
- Upgrade to EGA video package 340.00
- Upgrade to VGA video package 395.00

CUSTOM CONFIGURATION WELCOME

20MB 1MB RAM

386 TURBO 25 MHz

25ms 64MB 1:1

- NEC 64 MB 25ms access Hard Disk
- 1:1 interleave hard & floppy controller
- 1MB fast access ram installed
- 80386-20/25 MHz full size motherboard
- 80287/80387/Weitek socket ready
- PS/2 style case with LEDs, reset & keylock
- Super quiet 200W power supply
- One Teac 1.2MB drive
- Hercules compatible monographics card
- 14" Flat-screen Paper White Monitor
- Serial/Parallel/Game port
- Enhanced 101 keyboard
- Clock/calendar with battery

$1,785.00

- Upgrade to 4MB ram on board $300.00
- Upgrade to Priam 109MB 28ms hard disk .165.00
- Upgrade to EGA video package 340.00
- Upgrade to VGA video package 395.00

VOLUME DISCOUNT AVAILABLE

SALE ITEMS OF THE MONTH

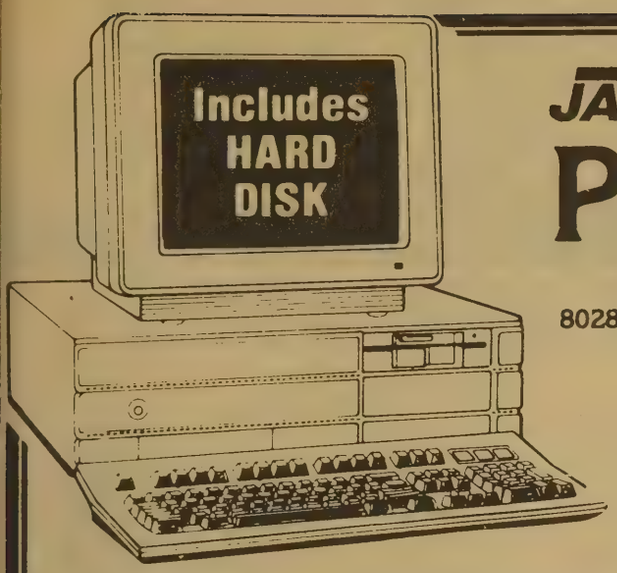
90.00	EGA Adapter w/printer port
160.00	Logitech Hi-Res. Serial Mouse
295.00	Loop 14" B&W Flat Screen
55.00	CTX 14" VGA 1024x768
	Micronet 2400 Int. Modem
	Panasonic 1180 Printer
	Panasonic 1124 Printer
	Chicony 101 Keyboard

$ 95.00
79.00
99.00
395.00

FREE POWER SUPERVISOR ON EVERY SYSTEM PURCHASED!!!

GIG Gamma International Group 714-898-4179
12362 Beach Blvd., #3, Stanton, CA 90680 714-898-4349

Monday-Friday 9-6 p.m., Saturday by appointment only. Price subject to change without notice.



JADE COMPUTER
Pro-286 $998*

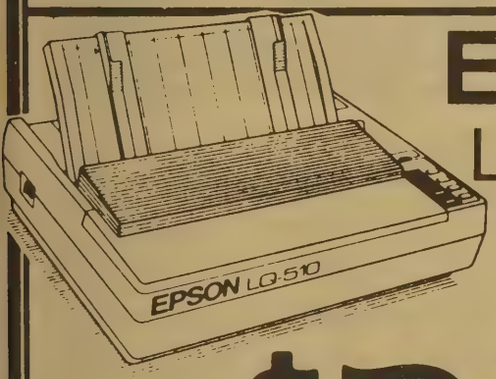
12 MHz, Zero Wait States,
80286 Computer w/20 MB Hard Disk

JADE COMPUTER
386 SX
$1398**

16 MHz, Zero Wait States,
80386 SX Computer with
40 Megabyte Hard Disk

Each System Includes: 1 MB of High Speed RAM expandable to 4 MB, Floppy Disk Drive, Hard Disk Drive, Hi-Res Mono-graphic Monitor, Parallel Printer Port, Dual Serial RS-232 Ports, Clock/Calendar w/Battery Back-up, Deluxe 101 Key Enhanced Keyboard, 8 Expansion Slots, 200 Watt Power Supply

For VGA System add $298
***For 40 MB add $148**
****For 80 MB add $248**

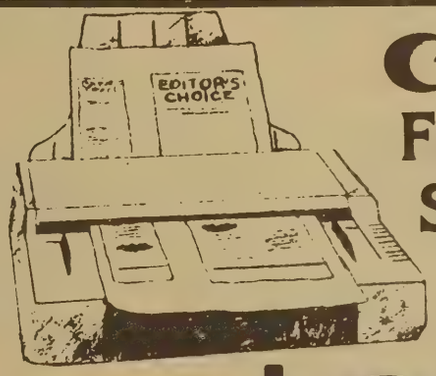


EPSON®
LQ-510

Letter Quality Excellence!

List Price $529

$299



Canon
Full Page Scanner

- 300 Dots Per Inch
- Automatic Sheet Feeder
- Up to 32 Gray Scales

OCR Software $198

List Price $1895

$398

JADE COMPUTER PRODUCTS Since 1975 SATISFACTION GUARANTEED!

JADE COMPUTER

18503 Hawthorne Blvd., 370-7474
(Between Artesia and 190th)

PC HOUSE
Fullerton
207 E. Orangethorpe Blvd.
Fullerton, CA 92632
(714) 525-9131
FAX: (714) 525-9160

PC HOUSE
San Diego
7240 Clairemont Mesa Blvd.
San Diego, CA 92111
(619) 571-5698
FAX: (619) 571-5864

PC HOUSE
Tarzana
18964 Ventura Blvd.
Tarzana, CA 91356
(818) 344-3792
FAX: (818) 344-3793

PC HOUSE
West LA
11275 Santa Monica Blvd.
West LA, CA 90025
(213) 478-4136
FAX: (213) 479-7258

PC HOUSE
Upland
130 S. Mountain Avenue #M
Upland, CA 91786
(714) 982-2501
FAX: (714) 985-3158

80 DATA 80 DATA 80 DATA 80 DATA 80 DATA

HIGHER SPEED & BETTER RESOLUTION

80 DATA 10 MHz XT (SI=2.1)

- 640KB Memory, Phoenix Bios
- Super XT case/Keylock/Reset
- 150W Power, 101 Keyboard
- FD Controller & Two 360KB FD Drives
- Video Card & Monitor

Mono $450 EGA $740 VGA $775

80 DATA 12 MHz AT (SI=15.3)

Ideal For Small Business & Home Offices

ADD 65 MB HD NEC RLL $445

- 640KB Memory, 0 Wait State
- Phoenix Bios w/Set up
- Super AT case w/Speed Display
- 200W Power, 101 Click Keyboard (NMB)
- FD/HD Controller, 1.2 MB Drive
- Video Card & Monitor

Mono $625 EGA $910 VGA $945

5th ANNIVERSARY SALE

2MB Memory Card For Epson Laser Printer $395

Epson Laser Printer $945

Epson LX-810 Printer	$179
Epson EPL-6000 Laser Printer	945
Logitech Hi-Res. Serial Mouse	64
Logitech Hi-Res. Bus Mouse	79
Logitech Scan-man plus	189
Logitech Finesse Desktop Publishing	92
80 DATA 2400 Internal Modem	85
80 DATA 2400 External Modem	95

Users please show this ad for special prices!

80 DATA 16 MHz 386SX (SI=19.3)

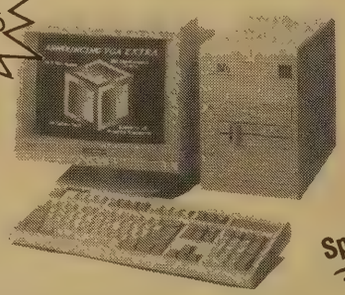
With 1MB Memory Our Best Seller

- 1 MB Memory, Paged & Interleaved
- Legal Phoenix Bios w/Set up
- Mini Case/Keylock/Reset/Speed Display
- 200W Power, 101 Click Keyboard (NMB)
- FD/HD Controller & 1.2 MB Drive
- Video Card & Monitor

Mono $921 EGA $1195 VGA $1225

80 DATA 20 MHz 386 (SI=24.3)

Excellent For AutoCAD & Window 386



- 1 MB Memory, 0 Wait, Phoenix Bios
- 8 MB Upgradable
- Tower Case/Keylock/Speed Display
- 230W Power, 101 Click Keyboard (NMB)
- 1:1 Interleaved FD/HD Controller & 1.2 MB Drive (Teac)
- Video Card & Monitor

Mono $1275 EGA $1580 VGA $1620

THIS MONTH'S SPECIAL DEALERS ONLY

• 80 Data WA3 FD/HD Controller	$63
• 80 Data WA6 1:1 FD/HD Controller	$73
• 80 Data WA6R 1:1 & RLL	$93
• 80 Data EGA Monitor	$280
• 80 Data EGA Card	$75
Special • 80 Data (1024x768) VGA Card	$107
• Relisys Multiscan Monitor	$415
Special • 80 Data (800x600) VGA Monitor	$290
Special • 80 Data (800x600) VGA Card	$87

Add 150 MB HD NEC ESDI $995

Special prices for dealers picking up at PC HOUSE store.

80 DATA 80 DATA 80 DATA 80 DATA 80 DATA

PC HOUSE
Carson
841 E. Artesia Blvd.
Carson, CA 90746
(213) 324-7780
FAX: (213) 324-8654

PC HOUSE
Alhambra
1220 S. Atlantic Blvd., #A
Alhambra, CA 91803
(818) 458-6747
FAX: (818) 458-6745

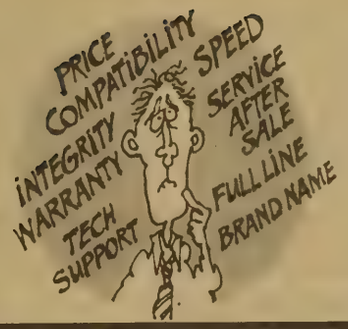
PC HOUSE
Pasadena
1190 E. Colorado Blvd.
Pasadena, CA 91106
(818) 568-8585
FAX: (818) 568-8586

PC HOUSE
Torrance
22805 Hawthorne Blvd.
Torrance, CA 90505
(213) 373-2688
FAX: (213) 373-2687

PC HOUSE
Van Nuys
8925 Sepulveda Blvd., #107
Sepulveda, CA 91343
(818) 895-0502
FAX: (818) 895-0621

PRC

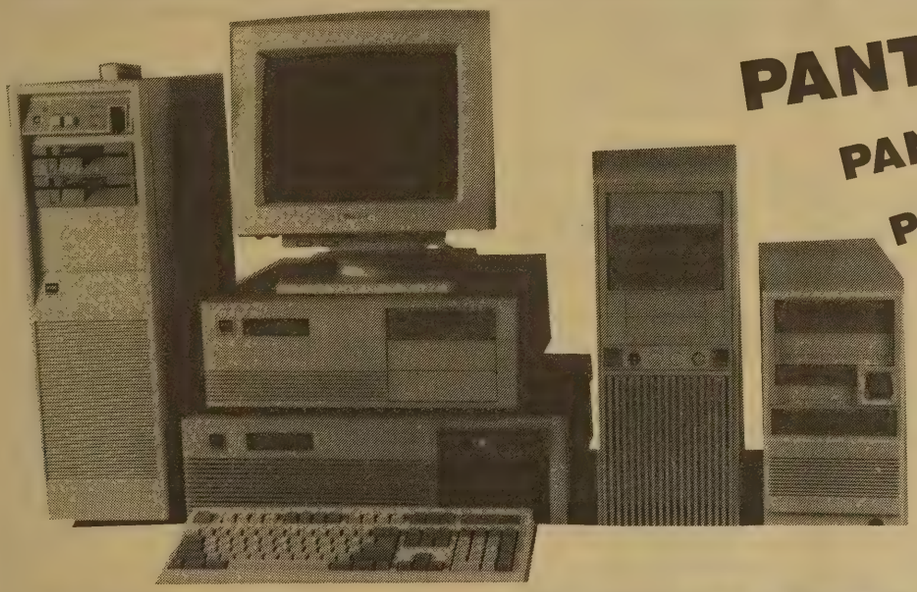
COMPUTER



CONFUSED???

. . . BY ALL THOSE COMPUTER ADS?

PRC Technology has become the supplier of choice for hundreds of mail order buyers because with PRC, **YOU** ARE THE BOSS! The systems quoted in this ad are just examples of PRC value. So call now for a quote on the system configuration of your choice!



PANTHER
PANTHER
PANTHER

NEW!

OMEGA
OMEGA
OMEGA

PANTHER AND OMEGA BOTH INCLUDE

- 1-32 Bit, 6-16 Bit & 1-8 Bit Slot
- 2 Megabyte Ram
- Full Size Vertical Case
- 250 Watt Power Supply
- Teac 1.2 MB 5¼" Floppy Disc Drive
- Teac 1.44 MB 3½" Floppy Disc Drive
- 1:1 Interleave Hard & Floppy Disc Controller
- Seagate 40 MB, 28 msec Hard Disc Drive
- 101 Key Enhanced Keyboard
- 16 Bit VGA Adaptor
- 14" Multisync 1024 × 768 VGA Color Monitor
- At I/O with 1 Serial, 1 Parallel & 1 Game Port

THE PANTHER
PRC's 486-25 Cache System
$4999

THE OMEGA
PRC's 386-33 Cache System
$3399

- **PRC 386-25 SYSTEM $1729** with 64K CACHE
- **PRC 386-25 SYSTEM $1319**
- **PRC 386-20 SYSTEM $1219**
- **PRC 386-16SX SYSTEM $919**
- **PRC 286-16 SYSTEM $839**
- **PRC 286-12 SYSTEM $699**

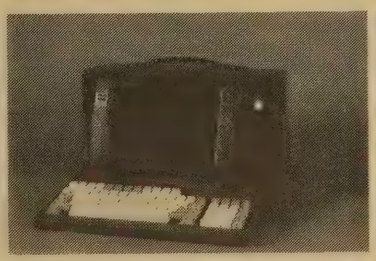
Each of these systems include:
Full Size At Case
220 Watt Power Supply
1 Megabyte Ram
Zero Wait State Operation
TEAC 1.2 Megabyte Floppy Disc Drive
1:1 Interleave Hard & Floppy Drive Controller
101 Key Enhanced Keyboard
Monochrome Graphic Adaptor with Printer Port
12" Amber Monitor with tilt/swivel base

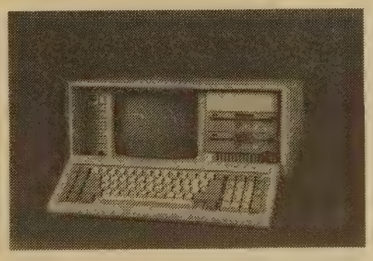
NEW FROM PRC FINANCIAL SERVICES

Financing Now Available to Business Accounts

We can help you
- Conserve Cash Flow
- Lower Your Taxes
- Simplify Your Depreciation Record
- Save Money

ASK FOR DETAILS ABOUT LEASING YOUR COMPUTER EQUIPMENT
ATTRACTIVE RATES — 24 HOUR APPROVAL





PRC 286 LCD PORTABLE $1049
- 80286-12 MHz CPU 0 Wait State
- 1 Megabyte Ram
- 1.2 MB Floppy Drive
- 1 Serial, 1 Parallel, 1 Game Port
- Color Graphic Adaptor with External CGA/Mono Adaptor
- 200 Watt Power Supply
- 84 Key Keyboard
- 640 × 200 LCD Screen
- Weight 22 lbs. • with Carry Bag
- 640 × 200 High Resolution Screen Available
- 1:1 Interleave Hard/Floppy Controller

PRC 286 CRT PORTABLE $875
- 3 Half-High Drive Openings
- 6 Expansion Slots
- Keyboard: Detached 84 Keys
- CRT: Built-in 9" TTL Dual Frequency Monitor
- 80286-12, 6/12 MHz
- 1 Megabyte Ram
- Teac 1.2 MB Floppy Disc Drive
- Monochrome or Color Graphic Adaptor with Printer
- 1:1 Interleave Hard/Floppy Controller

818 350-8810

Tech. Support: **1-818-350-8853**

PRC Technology Inc.

9460 Telstar #1 • El Monte, California 91731
Fax orders: 1-818-350-8922 Open 9am–6pm Mon. thru Fri.

and make adjustments before final printing. Impress does not support the Pacific Data Products 25-In-One cartridge, which I rather like. I had occasional problems with the Impress PostScript driver refusing to print.

For fonts, Impress uses Times, Helvetica, Courier, and a special Symbol font set. Fonts can be sized from 6 to 24 points. There is no illustration of the Symbol set in the documentation, so you will need to create a worksheet which contains all of the keystrokes available on your keyboard, then assign it to the symbol set to see what you will get printed. The symbols do appear on screen, so you can go trial and error until you find the one you want. Just remember that you are working on a cell by cell basis and cannot mix symbol sets on the same line in the same cell. There are things like numbers in circles and other goodies to make your worksheet more interesting.

The useful **View** command lets you expand or shrink the view of the worksheet from up to a 60% compression to a 150% expansion. You can also define an reduction down to 25% and an expansion of up to 200%.

Graphs can be added, positioned, sized, and redisplayed after a worksheet value has changed. For performance purposes, you can also display an inserted graphic as a shaded box so that it prints correctly, but does not slow down the program while you are working.

All in all, Impress nicely done, integrates with 1-2-3 seamlessly, and allows you to work in whatever mode you desire. (PC Publishing, 1801 Avenue of the Stars, Los Angeles, CA 90067, 213/556-3630.)

Burham Computer Center

908 E. Main St., Alhambra, CA 91801
TEL: (818) 570-0396
FAX: (818) 570-0936

OPEN: MON-SAT 10am to 6am

We beat all prices !!!

286-12 VGA SYSTEM	286-16 VGA SYSTEM	386SX-16 VGA SYSTEM	386-20 VGA SYSTEM
$1349.00	$1399.00	$1599.00	$1899.00

* 1 MB RAM ON BOARD
* 1.2 & 1.44MB FLOPPY DRIVES
* SEAGATE 40MB HARD DRIVE ST 251-1 "28 msec"
* WESTERN DIGITAL 1:1 INT. FD/HD CONTROL CARD
* AT I/O (2S, 1P, 1G)
* VGA CARD & MONITOR
* 101 ENHANCED KEY BOARD
* 1 YEAR WARRANTY (PARTS & LABOR)

* FROM 386-20MHZ TO 386-25MHZ SYSTEM	$ 109.00
* FROM 386-25MHZ TO 386-25 & 64K CACHE	$ 299.00
* 60MB RLL 1:1 HARD DRIVE	$ 79.00
* 80MB SCSI HARD DRIVE	$ 139.00
* 2400 INT. MODEM	$ 69.00
* LOGITECH HI RES. MOUSE	$ 69.00

VISA WE ACCEPT CREDIT CARD Master Card

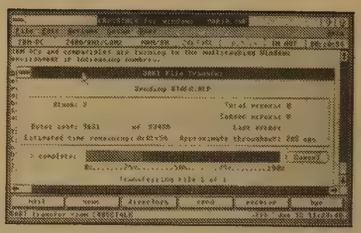
TELECOMMUNICATIONS

CROSSTALK FOR WINDOWS

Published By: Digital Communications
Reviewed By: Woody Liswood

If you have ever needed a reason to switch to the Windows environment, Crosstalk for Windows is it. I predict that once you have used this program, you'll find it very difficult to return to that old-fashioned, character-oriented, slow, not-too-flexible program you're probably used to using.

Crosstalk for Windows runs under Microsoft Windows 2.03 or greater; I run it under Windows 386 so that I can have true multitasking. Crosstalk for Windows downloads a file in the background while I work on some other task. Using the DDE language associated with Windows applications, you can have Crosstalk for Windows download information directly into another program. An Excel macro included



Crosstalk for Windows supports almost all file transfer protocols.

with the package runs Crosstalk for Windows in the background to download stock prices from CompuServe and insert that information into an Excel worksheet.

Crosstalk for Windows emulates a number of popular terminals, including DEC VT102, VT52 and IBM 3101. It supports most standard communications and display protocols and works with 300, 1200, 2400, 9600 and 19200 baud rates. Almost all file transfer protocols are supported—all varieties of Xmodem are there as well as Ymodem, Zmodem, Crosstalk, DART, CIS B, and Kermit. And, yes, you can also do ASCII transfers.

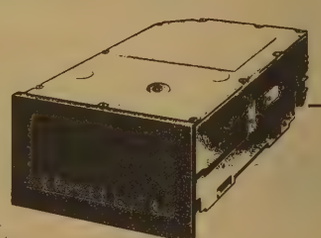
Crosstalk includes a robust scripting language which accesses all the program's functions. It includes a multitude of sample scripts to show you how to write the scripts and to allow you to start to use the program without much effort on your part. There is almost unlimited text management support. While communicating with another computer, you can capture, identify and send text back without leaving Crosstalk for Windows or breaking off communication.

If you're familiar with the Windows interface already, getting set up and using the program is easy.

Special features of note to frequent telecommunicators: the scroll buffer is adjustable to whatever size you like. If there is not enough memory, Crosstalk

The FUJITSU M 2263 - 5¼" Drive

A Lot of Drive for a Lot Less



- 778 MB unformatted capacity
- ESDI/SCSI Interfaces
- 16 MS positioning time
- 5 year warranty
- 200,000 hr MTBF
- 15 read/write heads

• NOW AVAILABLE CONTROLLERS AND HOST ADAPTORS FROM INTERPHASE AND NCL

Whatever your drive/controller needs - Call **Law • Cypress SJ Headquarters** for your nearest dealer. Ask for Carl Burke.

LAW·CYPRESS DISTRIBUTING·CO

LAW . CYPRESS DISTRIBUTING COMPANY
San Jose, CA (408) 297-9800
Seattle, WA (206) 241-6628
Outside CA (800) 344-3044
Mission Viejo, CA (714) 770-7244
Lake Oswego, OR (503) 636-4409

Canon • C. Itoh • Datasouth • FALCO • Fujitsu • Ikegami • Interphase • Link Magnavox • Moniterm • NCL • Panasonic • Televideo •

YOU CAN'T BEAT OUR PRICES!!!

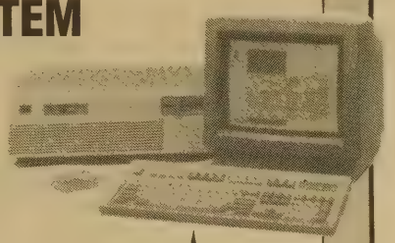
*TOWER 25 MHz 386 SYSTEM
W/32K CACHE & 66 MB HARD DISK

- Landmark=44 SI=31.6
- 1 MB Expandable to 12 MB, Memory Support Up To 16 MB Total With Optional Memory Board
- Intel 386 Cache Controller w/32K Cache RAM
- Socket for 80387 & Weitek Math Co-Processor
- 2x32 Bit, 5x16 Bit, 1x8 Bit Slots
- 1.2 MB Floppy Drive
- 66 MB 23 ms Hard Drive
- 1:1 Interleave Hard/Floppy Disk Controller
- 2 Serial, 1 Parallel, 1 Game Port
- 230 Watt P/S Tower Case Holds 6 Drives
- 101-Key Keyboard

$2299

***FREE 2400B PS EXTERNAL MODEM W/EVERY PURCHASE .....($115 VALUE)**

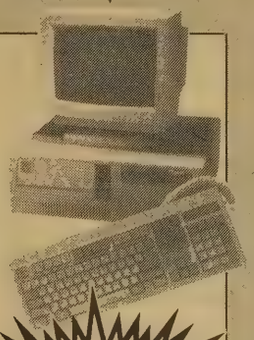
20 MHz 386 SYSTEM
W/66 MB HARD DISK



- Landmark Speed=34 SI=28
- 1 MB Expandable to 8 MB On Board
- 1.2 MB Floppy Drive
- 1:1 Interleave
- 66 MB 23 ms Hard Drive
- 2 Serial, 1 Parallel, 1 Game Port
- 101-Key Keyboard
- 230 Watt Power Supply & Quality Case
- Socket for 80387

$1695

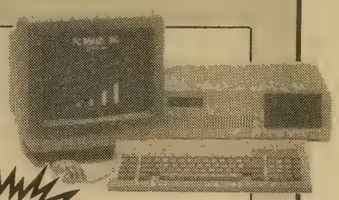
386 SX W/INTEL CHIPSET
W/42 MB HARD DISK



- Landmark=19.6
- 1 MB Expandable to 8 MB On Board
- 5x16 Bit, 3x8 Bit Slots
- 1.2 MB Floppy Drive
- 42 MB 28 ms Hard Drive
- 1:1 Interleave Hard/Floppy Disk Controller
- 2 Serial, 1 Parallel, 1 Game Port
- 200 Watt Power Supply & Quality Case

$1395

12 MHz AT SYSTEM



- Landmark Speed=15.9 SI=13.4
- 640K RAM Expandable to 4 MB On Board
- 1.2 MB Floppy Drive
- 1:1 Interleave Hard/Floppy Disk Controller
- 200 Watt Power Supply & Quality Case
- 101-Key Keyboard
- 16/20 MHz Available

$695

10 MHz TURBO XT

- 256K RAM Expandable to 640 MB On Board
- 360K Floppy Disk
- Floppy Disk Controller
- 165 Watt Power Supply & Quality Case
- 101-Key Keyboard

$340

MONITORS

16" Super VGA	Call
14" VGA	$355
14" EGA	339
14" Mono	115
12" IBM Style Green	70

Monitor With Card CALL For The Best Price

HARD DISK DRIVES

ST-225 20 MB	$199
ST-251-0 40 MB	355
ST-251-1 40 MB	399
ST-4096 80 MB	570

FLOPPY DRIVES

1.2 MB (5¼")	$75
360 KB (5¼")	64
1.44 MB (3½")	80
720 MB (3½")	72

LAPTOP SPECIAL!!

286-12 MHz-40 MB
1.44 MB FDD, 1 MB On Board

$2250

***FREE 2400B PS POCKET EXTERNAL MODEM W/EVERY LAPTOP PURCHASE ($295 VALUE)**

KEYBOARDS & CASES

101-Key Keyboard With Click	$45
Full AT Case	52
Baby AT Case	50
Mini Tower Case	109
Tower Case	CALL
XT/AT Case	50

Case w/Power Supply CALL for the BEST PRICE

CALL For Any Items Not Listed!!

MODEMS

2400B PS External	$115
2400B PS Internal	99
2400B PS Pocket External	295

ADD ON CARDS

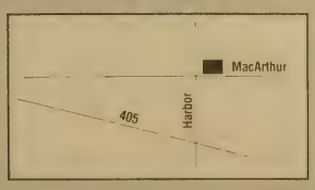
AT I/O 2S/1P/1G	$45
MGP Card	45
EGA CArd	140
VGA 8 Bit	135
VGA 16 Bit	180
MFM 1:1	125
MFM 2:1	110
RLL 1:1	140
RLL 2:1	125
ESDI	CALL

DEALERS CALL FOR SPECIAL PRICE

Mpc MEGA PC TECHNOLOGY COMPANY

TEL: (714) 850-1044
FAX: (714) 850-0321

3605 W. MacArthur Blvd.
#704, #705
Santa Ana, CA 92704



for Windows will use the disk as virtual storage. You can enter and edit text in this buffer any time you want.

If you love the mouse, you never even have to touch the keyboard, since the mouse can initiate every Crosstalk for Windows command and function.

This program has actually changed my entire style of telecommunicating. In the past, I used to sit with my hands at the keyboard, staring at the screen, ready to type and reply at a instant's notice. With Crosstalk for Windows, I more or less slouch back, and just move the mouse around. I can log on, log off, read messages, thread my way through the maze of CompuServe or The WELL, without touching the keyboard. In fact, the only time I have to keyboard is when I reply to a message, or I want to create a macro on the fly.

Try as I might, I could not find anything I disliked about Crosstalk for Windows, its style of operation, and its behavior on my computer. All in all, it's the best communication program I have used...and that goes back to my Apple II days.

CompuLAN

Networking & Communications Manufacturer

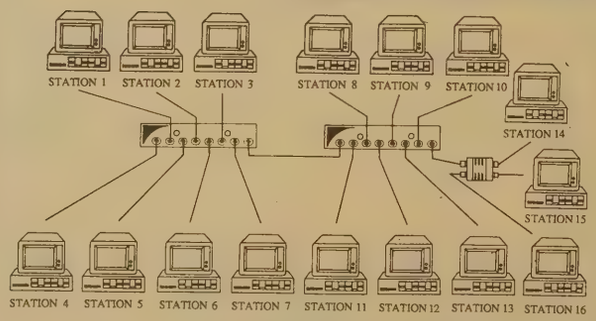
5 reasons why people choose CompuLAN over the others:

- **SATISFACTION GUARANTEED:** or money back.
- **UNBEATABLE PRICE:** or we'll match it.
- **AFTER SALES SERVICE:** full technical support.
- **SAME DAY DELIVERY:** order before 3:00 PM.
- **DIRECT FROM FACTORY:** no middleman.

	Dealer's price
8 bit "2-in-1" ArcnetCard Star Coaxial + Twisted pair	$65
8 bit "4-in-1" ArcnetCard Bus Coaxial + Twisted pair	$85
16 bit ArcnetCard Star	$125
16 bit ArcnetCard Bus	$145
16 bit ArcnetCard Twisted pair	$145
8 port Arcnet Active HUB (Stackable)	$169
8 bit NE-1000 Compatible Card	$109
16 bit NE-2000 Compatible Card	$159
Novell Netware Software on sale	Call

NEW PRODUCTS:

- **16-bit Arcnet TURBO card**
- **16-bit Arcnet & Ethernet cards for PS/2 MCA**
- **16-bit twisted pair Ethernet cards**
- **Diskless Workstation/File Server**



Free ELS-1!!
(One FREE copy with your one-time purchase of 40 16-bit Arcnet cards.

Call now for volume discount:

Northern California and Nationwide:
Tel: (408) 922-6888
Fax: (408) 954-8299
1842 Daltrey Way
San Jose, CA 95132

Southern California:
Tel: (818) 286-9304
Fax: (818) 286-2069
1103 S. San Gabriel Blvd., #A
San Gabriel, CA 91776

WANTED: OEMs, VARs, SIs, Distributors, Resellers

GAMES

By Mike Markowitz

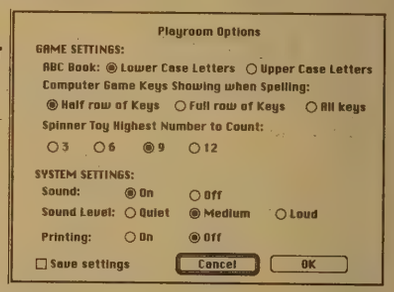
This new monthly column will review notable new games, mainly in the MS-DOS, Macintosh and Apple II arenas. Your comments and suggestions are welcome.

THE PLAYROOM

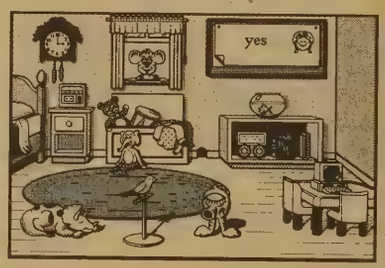
Published By: Brøderbund
For: Mac, PC, Apple II
Suggested Retail: Apple II $39:95; Macintosh $49.95; IBM PC/Tandy $44.95

Software for kids is usually disappointing, both in the shortage of titles and the poverty of imagination. Blame unrealistic parental expectations, limitations of the technology, or lack of standards. The Playroom indicates that we are finally seeing preschool software worthy of the computers it runs on. "Brøderbund is a relatively young company with young employees, and many of us are now having children of our own. The Playroom is the type of program we want for our own children," says the press release.

Designed for ages 3 to 7, Playroom offers a variety of difficulty settings.



The Playroom is designed for ages 3 to 7, with variable difficulty. It reinforces skills of telling time, relating the alphabet to the keyboard, counting, and reasoning. Careful thought went into creating a sense of discovery and empowerment. Equal care went into "child-proofing" the program, to protect other files on the family computer.



Playroom's main screen, with Pepper Mouse, the imaginary playmate, peeking in the window.

The Mac version is limited to the small monochrome screen, and requires 1Mb of memory. The 8-bit Apple II version has 16 colors and needs 128K; the IBM PC-compatible version needs 512K and supports all standard video modes including VGA.

Playroom's main screen shows a corner of a bedroom. A cuckoo clock hangs on the wall. You see a bookcase, a toy chest, a computer, a baby dinosaur curled up on the rug, and other things to examine or explore. Pepper Mouse, the program's mascot and imaginary playmate, looks in at the curtained win-

The New Standard for Multi-user Business Solutions . . .

UNIXEXPO WEST

THE UNIX™ OPERATING SYSTEM EXPOSITION & CONFERENCE

May 7-9, 1990
Los Angeles Convention Center
Los Angeles, CA

Whether you're a technical, engineering, or business professional, system integrator, or reseller ... whether you currently utilize UNIX or another operating system ... visiting **UNIX EXPO West** will provide the knowledge you need to put the UNIX system to work for you.

Since it began in 1984, UNIX EXPO has helped tens of thousands of MIS/DP, technical and engineering professionals learn the true power and potential of the UNIX operating system. Now this proven, multi-faceted educational experience is available to you at **UNIX EXPO West.**

UNIX EXPO West brings together IBM, DEC and over 125 leading suppliers of UNIX-based products offering you the broadest spectrum of multi-user solutions west of the Rockies in 1990: business applications software, system hardware, program developers, tools, peripherals and more!

And a visit to **UNIX EXPO West** gives you an opportunity to experience a wide range of valuable educational and training seminars covering everything from UNIX system basics to in-depth tutorials.

Don't delay ... mail for your FREE Exhibit Hall Show Admission ticket to the most important West Coast UNIX system event in 1990!

SAVE $30! Mail the coupon below for your FREE **UNIX EXPO West** Exhibit Hall Admission ticket, or **call (212) 391-9111 today!**

Mail to: UNIX EXPO West, c/o National Expositions Company, Inc.,
15 West 39th Street, New York, NY 10018

( ) **Yes,** I'd like my FREE Exhibit Hall Admission ticket for UNIX EXPO West

Name _____ Title _____

Company _____ Phone _____

Address _____

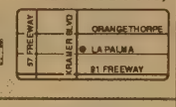
City _____ State _____ Zip _____

Produced & Managed by:
National Expositions Company, Inc.

UNIX® is a trademark of AT&T.
UNIX EXPO WEST is not affiliated with AT&T.

TRANSNATIONAL ELECTRONICS, INC. (BITS & PIECES COMPUTER PRODUCTS)

1130-A N. KRAEMER BLVD., ANAHEIM
At La Palma
(714) 630-8711 • 630-8644 • FAX 630-5619
Authorized Commodore Dealer and Repair



Amiga 1000 Trade-In Going on Now! Call for Details

ACCESSORIES

A2010 INT. DRIVE	$125
A2088 BRIDGE CARD	$499
512K RAM EXP	$125
1200 BAUD MODEM C64	$70
2400 BAUD MODEM	$135
A2000, OK MEMORY EXPANSION	$190
A2091-40, 40MB HD	$675
A500, 20MB H/D	$499
SAFESKIN FOR A500 & A2000, A1000 KEYBOARD	$21.95
1352 MOUSE (COMMODORE & IBM)	$75
1541-II DISK DRIVE	$210
A1084 RGB MON.	$315
MPS 1250 PRINTER	$245
NX 1000R	$299
1581 DISK DRIVE	$225
XB 2410 PRINTER	$480
1750 RAM EXP.	$179
1700 RAM EXP.	$99
1764 RAM EXP.	$145
C64 PWR SUPPLY	$39.95
NX 1000 III	$199
A520	$32
PRINTER INTERF. C64	$47
MODEM INTERF. C64	$27

COMMODORE AMIGA 500 — FREE SOFTWARE

A550
W/1MB RAM
1084 RGB MONITOR
& STAR MICRONICS NX1000-II PRINTER & CABLE
$1125

COMMODORE AMIGA

WE REPAIR ANY CBM COMPUTER FROM ANY AUTHORIZED DEALER

COMMODORE AMIGA 2000

1MB RAM
3.5" INT. DRIVE
KEYBOARD, MOUSE
A1084 RGB MONITOR
$1699

AMIGA 2000 HD
1MB RAM
BUILT-IN 3.5" DISK DRIVE
40MB HARD DRIVE
KEYBOARD, MOUSE
$1999

ATTENTION STUDENTS AND EDUCATORS!! SPECIAL DISCOUNTS!! CALL NOW

UPGRADE YOUR A1000 TO A2000 OR A2000 HD
CALL FOR DETAILS!

SUPRA RAM A2000 W/2MB INSTALLED (UPGRADE TO 8MB)	$300
40MB QUANTUM PRO DRIVE	$550
80MB QUANTUM PRO DRIVE	$725
105MB QUANTUM PRO DRIVE	$995

COMPLETE AMIGA MODEM SET-UP
- SUPRA 2400 BAUD MODEM (OR OTHER 2400 BAUD MODEM)
- A TALK III (OR OTHER MODEM SOFTWARE)
- MODEM CABLE

$169

MON. - FRI. 9-7 • SAT. 9-6
CALL OUR BBS AT 714-630-8897
PRICES SUBJECT TO CHANGE WITHOUT NOTICE

Only Amiga Makes It Possible.

LIBERAL FINANCING AVAILABLE

COMMODORE AMIGA SOFTWARE

1351 C64 MOUSE	$39
MODEM–C64 1200 BAUD	85
TV SPORTS BASKETBALL	$36
DIGIVIEW GOLD	$165
DRAGON SCAPE	$25
3D POOL	$23
AFTER BURNER	$33
AMIGA COMPANION	$19
DRAGON'S LAIR	$38
MY PAINT	$31.50
ISLAND OF HOPE	$26
ALTERED BEAST	$35
J FORTH PROFESSIONAL	$135
AC FORTRAN	$185
PROFESSIONAL DRAW	$127
AREX X	$32
BREACH II	$33
PROFESSIONAL PAGE	$195
THE SECURITIES ANALYST	$52
BROADCAST TITLER	$191
STARFLIGHT	$37
MAPPING THE AMIGA	$22
AMIGA DESKTOP VIDEO GUIDE	$19
DRAGON FORCE	$37
AMI ALIGNMENT SYS.	$37
OMEGA	$32
SCULPT-ANIMATE 4D	$425

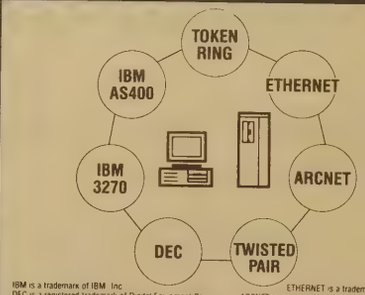
Commodore SOFTWARE

OUTRUN	$25.07
PAPERCLIP III	$42
SPEED TERM	$28
SAT	$28
MONOPOLY	$26
HOTSHOT	$47
CP/M C128	$18
1541 REPAIR & MAINT.	$19
GEOS 2.0 C64	$41

DATA COMMUNICATIONS NETWORKING PRODUCTS

EAGLE ELECTRONICS

1233 E. COLORADO ST., GLENDALE, CA 91205
(818) 244-3191 (213) 245-2338 1-800-992-3191



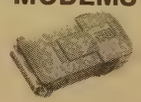
IBM is a trademark of IBM Inc
DEC is a registered trademark of Digital Equipment Corp
ETHERNET is a trademark of Xerox Inc
ARCNET is a registered trademark of Datapoint Corp

- LARGE LOCAL INVENTORY
- OPEN MON. THRU SAT.
- VOLUME PURCHASING

LINE DRIVERS

DC TO 19, 200 BAUD

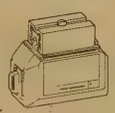
SHORT RANGE MODEMS



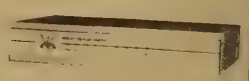
SYNCHRONOUS AND ASYNCHRONOUS

ETHERNET TRANSCEIVERS

- BNC T— SPLIT ADAPTER
- N TYPE
- DIRECT ETHERNET



ETHERNET BRIDGES

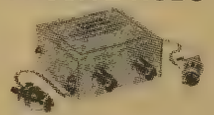


TOKEN RING REPEATERS

COPPER & FIBER OPTIC

MULTIPLEXERS-LOCAL AREA

4-PORT PASSIVE HUBS



SHIELDED METAL BODY

BATTERY BACK-UP SYSTEMS

- MACINTOSH
- COMPAQ
- IBM
- AT&T
- AND MORE

CABLE CONNECTORS

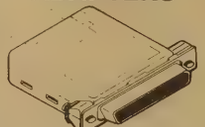
LARGEST SELECTION ON WEST COAST

BULK CABLE

- PLENUM OR PVC
- RG-62
- TWINAXIAL
- TWISTED PAIR

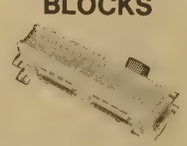
JUNCTION PANELS

MODULAR PLUG ADAPTERS



- PLEASE CALL FOR OUR LATEST 80-PAGE CATALOG
- LARGE SALES AREA
- UPS SHIPMENTS

PUNCH-DOWN BLOCKS



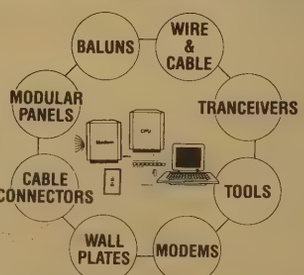
BALUNS

- ETHERNET
- ARCNET
- TWINAXIAL

25 PAIR TRUNK CABLES

CABLE TERMINATORS

- 75 OHM
- 93 OHM
- TWINAX
- 50 OHM
- N TYPE



RANTEK COMPUTER CENTER

PRINTERS

Brother
HL-8E Laser Editor's Choice $1699
HL-8PS Postscript Editor's Choice 3095

Canon
BJ130e Wide Cartridge, 300dpi, QUIET! ..... Call
LPB, LBP8-III Laser Printers w/Fonts ..... Call
LBP-4 ..... $995

Citizen
GSX 140 ..... $329 Color Kit $49

Diconix
150 Plus ..... Call

Epson - All Models

Fujitsu
DL3400 ..... $495

Hewlett Packard
DeskJet Plus $675
LaserJet Series II 1525
LaserJet IIP, IID printers 975/2670
LaserJet III....(In Stock!) ..... Call

NEC
P2200XE 192/54 CPS $335
LC890/290 Laser 2995
P9XI 400/140 CPS 1030
LC890XL Laser ..... Call

Okidata
182 Turbo $225
ML320 300/62 CPS 365
ML321 300/62 CPS 479
ML380 180/60 CPS 359
ML390 270/90 CPS 475
ML391 270/90 CPS 655
ML393 450/120 CPS 995

Panasonic
KX-P1180 192/38 CPS $189
KX-P1191 240/48 CPS 245
KX-P1124 192/63 CPS 299
KX-P1624 192/63 CPS 469

Star
NX1000-II $175
NX 2410 279

Toshiba
P321SL $429
P341SL 599
P351SX 929

MICE

M.S. Serial w/Paint Brush $119
M.S. Buss w/Paint Brush 119
Logitec Serial Series 9 89
Logitec Buss Series 9 99
P.C. Mouse w/PC Paint Plus 109

MEMORY CHIPS

Intel
8087-1 159
8087-2 119
8087-3 84
80287-G 129
80287-8 189
80287-10 249
80387SX 379
80387-16 339
80387-20 379
80387-25 479
80387-33 ..... Call
256K Dram ..... Call
1 Meg Simms ..... Call

Prices Subject to Change

ALR

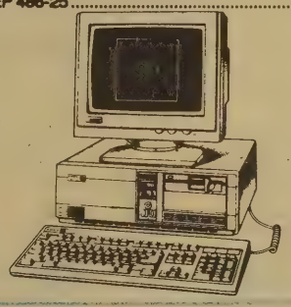
FlexCache 20 MHz D.T. 1995
FlexCache 25 Mhz D.T. 40Mb Hard 2495
FlexCache 33 Mhz 4395
PowerVEISA 486/25 150Mb ..... Call
PowerVEISA 486/25 330Mb ..... Call
PowerVEISA 486/33 150Mb ..... Call
PowerVEISA 486/33 330Mb ..... Call
PowerCache 4e 150Mb 9470
Other ALR 486-Based Systems ..... Call
Microflex 3300 4495
PowerFlex 386-SX Upgrade Module 349
PowerFlex I486 Upgrade Module 1895

Power Flex 286 12.5 MHz
- 14" VGA (.31mm dot) Monitor
- 40 Mb 28ms Hard Disk
- 1 Mb RAM w/EMS Driver
- 16 bit VGA Card
- Serial and Parallel Ports
- 3 1/2" & 5 1/4" Disk Drives
- 101 Key Keyboard
- Upgradeable to 386 SX
- Upgradeable to 486 25 MHz

$1795.00

EVEREX

STEP 286-12 MHz ..... $Call
STEP 286-16 MHz ..... Call
STEP 286-20 MHz ..... Call
STEP 386-16SX ..... Call
STEP 386-16 ..... Call
STEP 386-20 ..... Call
STEP 386-25 ..... Call
STEP 386-33 ..... Call
STEP 486-25 ..... Call



ZENITH

Z286LP/12 286-12 20Mb $1645
Z286LP/12 286-12 40Mb 1889
Z248/12 286-12 40Mb 2075
Z386 SX 386-16SX 40Mb 2440
Z386 SX 386-16SX 80Mb 2869
Z386-20 40Mb ..... Call
Z386-20 80Mb ..... Call
Z386-25 70Mb ..... Call
Z386-25 150Mb ..... Call
Z386-25 320Mb ..... Call
Z386-33 150Mb ..... Call
Z386-33 320Mb ..... Call
Minisport 1MB RAM 80C88 4.77/8 1219
Minisport 2MB RAM 80C88 4.77/8 1705
SupersPort 2-3.5" 720Kb 1219
SupersPort 20Mb 1705
SupersPort 286 20Mb 80C286-12 2439
SupersPort 286 40Mb 80C286-12 2745
SupersPort 286e 20Mb LCD VGA 3049
SupersPort 286e 40Mb LCD VGA 3354
SupersPort SX 40Mb LCD VGA 3659
SupersPort SX 100Mb LCD VGA 4086
TurbosPort 386e 40Mb LCD VGA 386-20 ..... Call

SOFTWARE

Aldus
PageMaker 3.0 ..... $489

Ashton-Tate
dBase III+/dBase IV $429/489

Bloc Publishing
Personal Lawyer $39
Popdrop 34
Formfiller 89
Formtool 55

Borland
Paradox 3.0 ..... $449
Quattro/Quattro Prof 89/295
Turbo C 2.0/Prof 99/179
Turbo Pascal 5.5/Prof 99/169

Central Point
Deluxe Option Board $119
PC Tools Deluxe 5.5 79

Computer Associates
Supercalc 5 ..... $Call

DAC Software
Dac Bonus Pack 4.0 ..... $179
Dac Easy Accounting 4.0 ..... Call
Dac Easy Payroll 4.0 ..... Call
Lucid 3-D 69

Fifth Generation
Fastback Plus $119

Generic Software
Generic CADD Level 3 ..... $189

Intuit
Quicken 3.0 ..... $39

Lasergo
GoScript/GoScript + ... $125/239

Logitech
Finesse $89

Lotus
Agenda $269
123 v 2.2/3.0 ..... Call/339
Symphony 439

Micrografx
Designer ..... $Call
Draw +/Graph.+ ..... Call/Call

Microsoft
Excel ..... $Call
Flight Simulator 4.0 45
MS-DOS & GW BASIC ..... Call
Word for Windows 319
Quick BASIC 67
Quick C 67
Quick Pascal ..... Call
Windows 286/386 ..... 69/135
Word 5.0 219
Works 99

Peter Norton
Norton Advanced Utilities $99
Norton Commander 40

Quarterdeck
DESQView 2.2/386 ..... $79/147
QEMM 39

Software Publishing
First Publisher $85
Harvard Graphics ..... Call
PFS First Choice 3.0 89
PFS Professional Write 135

Symantec
Q & A $229
Timeline 3.0 385

Word Perfect
Library $89
Word Perfect 5.1 259

Wordstar
Wordstar Professional v 5.5 Limited Qty $149
Wordstar v 5.5 Upgrade ..... Call

Xerox
Ventura Publisher 2.0 ..... $Call
Formbase 319

MONITORS

CTX
EGA/VGA $349/365

Mitsubishi
1381 14" Diamond Scan VGA/EGA $499
HL6605 16" VGA/EGA 1295
HL6905 20" VGA/EGA 2325

NEC
MultiSync GS 14" Multi Mono $249
MultiSync 2A 14" VGA 475
MultiSync 3D 14" VGA/EGA 599
MultiSync 4D 16" VGA/EGA 1150
MultiSync 5D 20" VGA/EGA 2350

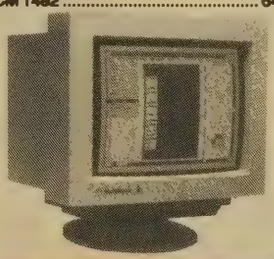
Panasonic
C1391 PanaSync 14" VGA/EGA $489
15"/19" Grey Scale Monitors ..... Call

Relisys (Top Rated by Infoworld and PC World)
9503 14" VGA Mono $135
9513 14" VGA 365
1520 15" VGA/EGA Multifreq ..... Call

Seiko NEW!
1440 14" VGA $579
1450 14" VGA ..... Call

Sony
1304 ..... Call

Zenith
ZCM 1492 649



VIDEO CARDS

ATI
VGA Wonder w/256K (16 bit) $269
VGA Wonder w/512K (16 bit) 299

Genoa
6400 512Kb ..... Call
5400 ..... Call

Hercules
VGA ..... Call
InColor ..... Call
MonoGraphics ..... Call

NEC
Graphics Engine 512K ..... Call
Graphics Engine 1M ..... Call

Optima
Optima/1024 VGASync 512K $199

Orchid
ProDesigner VGA (256K) 800X600 ..... $295
ProDesigner VGA (512K) 1024X768 345

Paradise
EGA Autoswitch 480 w/256K $139
VGA+ w/256K (8 bit) 219
VGA+ w/256K (16 bit) 249
VGA Professional w/512K 239
VGA 1024 259

PC Brand
EGA Autoswitch w/256K (8 bit) $99
VGA w/256K (16 bit) 175

STB
Multi-Res II ..... Call

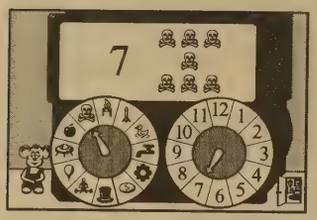
Video Seven
1024i VGA w/256K (16 bit) $259
VRAM VGA w/256K, 512K (16 bit) ..... Call

22129 Sherman Way,
Canoga Pk. (W. of Topanga)

M-F 10-6 Sat 10-3
Fax (818) 347-1169

818-347-1100

PRODUCT SPOTLIGHT



The Mac version of playroom uses digitized speech to aid the educational process.

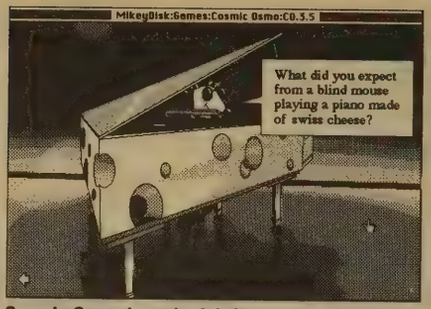
dow. Brøderbund's programmers excel at animation; the effects are amusing and realistic. Click on a drawer, for example—it slides open and a balloon floats out. The Macintosh version uses digitized speech—one reason the program spills over onto a second disk. The application is only 160K; graphic and sound resources add over 1240K!

The Playroom uses "key-disk" copy protection; it will not run unless you insert the original disk. Brøderbund has always been hawkish about piracy, but this is a serious problem in a package intended for little hands, sticky with peanut butter. If the program disk becomes damaged, a replacement costs $15. Disk-based copy protection is obsolete; Brøderbund needs to rethink this unwise policy. (Brøderbund,17 Paul Drive, San Rafael, CA 94903, 800/521-6263.)

COSMIC OSMO

Published By: Activision
For: Macintosh
Suggested Retail: $69.95

The evolution of computer games is like the evolution of reptiles—at some point, bigger and bigger sizes started to seem like a good idea.



Cosmic Osmo is a playful, humorous, hypercard space adventure.

It wasn't.

Originally published by Activision (1989), Cosmic Osmo is a gargantuan set of HyperCard stacks that fill six floppy disks. When you get everything installed, it totals 104 files, or 3,965K on disk—almost 4Mb. The game is a playful, humorous space adventure, almost without words, but filled with interesting puzzles. The program includes the VideoWorks HyperCard driver, and there are some wonderful animation sequences. Unfortunately, Osmo crashed and locked up so much that I simply lost interest after a few hours.

HyperCard is a good substitute for a programming language, but it is not a viable development environment for a project of this magnitude. Nevertheless, sometimes it is better to fail at something grand, than to succeed at something wimpy. Activision has apparently abandoned the Macintosh, but I hope the team that created Cosmic Osmo (Cyan Productions) will not abandon the design of computer entertainments. (Activision, 3885 Bohannon Drive, Menlo Park, CA 94025, 415/329-0500.)

THE DUEL (TEST DRIVE II)

Published By: Accolade
For: Macintosh, Apple IIGS, PC and compatibles
List Prices: $54.95 (Mac); $49.95 (Apple IIGS); $49.95 (PC and compatibles)

The Duel simulates racing the Ferrari F40 against the Porsche 959. The Macintosh version is limited to the monochrome small screen; a joystick is highly recommended. You can steer and accelerate with the numeric keypad, but somehow that doesn't feel much like a Ferrari, or even a Yugo.

A growing series of inexpensive add-on disks enhance the play value of the game. The Supercars include awesome vehicles like the Ferrari Testarossa, Lamborghini Countach and '89 Corvette ZR1. The Muscle Cars lets you race legends like the '68 Shelby Cobra, '67 Pontiac GTO, and '69 Dodge Daytona. California Challenge is a scenery disk that

(800) 783-3338

STAR 8088 - 10 MHZ
GREAT CHOICE

8088-10 MHZ INTEL C.P.U.
1 MEG RAM INSTALLED
200 WATT POWER SUPPLY
20 MEG HARD DRIVE
1-360KB FLOPPY DRIVE
1-SER, 2-PAR & 1-GAME PORT
CLOCK/CALENDAR INSTALLED
MONOGRAPH. MONITOR/CARD
101 ENHANCED KEYBOARD
DELUXE CASE/LED'S KEYLOCK

$755

STAR 286 - 12 MHZ
SUPER VALUE

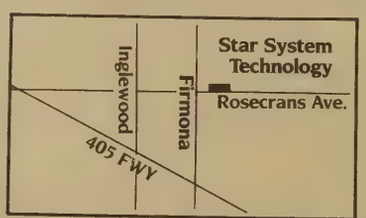
80286-12 MHZ INTEL C.P.U.
1 MEG RAM INSTALLED
200 WATT POWER SUPPLY
20 MEG HARD DRIVE (28MS)
1-1.2 OR 1.44 MG FLOPPY DRIVE
2-SER, 2-PAR & 1-GAME PORT
REAL TIME CLOCK/CALENDAR
MONOGRAPH. MONITOR/CARD
101 ENHANCED KEYBOARD
DELUXE CASE/LED'S KEYLOCK

$1065

ALL SYSTEMS INCLUDE:

- WORD PROCESSOR
- SPELL CORRECTOR
- COMMUNICATIONS
- SPREADSHEET
- DATABASE
- OUTLINER
- DESKTOP
- GRAPHICS

WITH MANUALS!!



TERMS: All prices subject to change without notice. We accept MasterCard, VISA, American Express, Cashier's Check or Certified Check.
LEASE TO OWN

STAR SYSTEM TECHNOLOGY
★★★★★
4547 ROSECRANS AVE.,
HAWTHORNE, CA 90250
SALES: (213) 675-5303 FAX: (213) 675-0864

STAR 386SX-16 MHZ

- 1 MB RAM INSTALLED
- 40 MB MFM HARD DRIVE
- MONO MONITOR
- 720x350 CARD

$1470

ADD $350 FOR 14" EGA COLOR MONITOR
ADD $495 FOR 14" VGA COLOR MONITOR
1024x768/16 BIT CARD

STAR 386-20 MHZ

- 1 MB RAM INSTALLED
- 40 MB HARD DRIVE
- MONO MONITOR
- 720x350 CARD

$1795

ADD $350 FOR 14" EGA COLOR MONITOR
ADD $495 FOR 14" VGA COLOR MONITOR
1024x768/16 BIT CARD

STAR 386-25 MHZ

- 64KB CACHE
- 1 MB RAM INSTALLED
- 40 MB HARD DRIVE
- MONO MONITOR

$2250

ADD $350 FOR 14" EGA COLOR MONITOR
ADD $495 FOR 14" VGA COLOR MONITOR
1024x768/16 BIT CARD

THE ABOVE SYSTEMS INCLUDE:

- 1-1.2 MEG FLOPPY DRIVE
- 200 WATT POWER SUPPLY
- 1:1 HARD/FLOPPY CONTROL
- 2-SER 1-PAR 1-GAME PORT
- 101 ENHANCED KEYBOARD
- REAL TIME CLOCK/CALENDAR
- DELUXE CASE/LED'S KEYLOCK

QUALITY, PRICE, SERVICE

3158 Wilshire Blvd. 213-388-2400
Los Angeles, CA 90010 FAX: 213-388-5404

UNITEC COMPUTER PRODUCTS CO.

SHARP

PC 4641
8088 10MHz,
640K, 40Mg HD
640x400 Res.
El Backlight Inter.
Battery
$CALL

PC 5541
80286 12MHz,
640K, 40Mg
25Mg VGA
FREE Carrying
Case
$2390

2400 BD SHARP MODEM
4641 & 5541
w/Purchase of P4641
~~$500~~ Only **$175**

TOSHIBA

Accessories Available

T1000Se	$1079
T1200HB	1839
T1600/40	3140
T3100e/40	2560
T3200/40	3190
T3200 SX/40	3780
T5100/100	4220
T5200/100	4990

brother

SPECIAL PRICES
Lazer HL8e, 1 Mg RAM, 44 Fonts
HP II, Diablo, Epson, IBM
Compatible $1620
Lazer HL8PS PostScript 2 Mg &
More 2985

EVEREX

COMPUTER SYSTEMS DIVISION

One Year On-site Warranty

WE HAVE THE BEST PRICES

STEP 286-12	CALL
STEP 286-16	CALL
STEP 386-20	CALL
STEP 386-25	CALL
STEP 386-SX	CALL
STEP 386-33	CALL

AGI Computer, Inc.

286-10 MHz	$745
286-12 MHz	899
386-16SX	1120
386-20 MHz	1560
386-25 MHz	CALL
386-33 MHz	CALL

HYUNDAI
DEALS

286e 1.2 Dr, 40Mg HD, VGA
Card, & VGA Monitor .. $1445
386 SX, 1Mg RAM,
1.2 Dr. 1055
386c 20MHz, 1Mg,
1.2 Dr. 1390

NOVELL
Network SPECIALS

ELS I - 4 User 2.15	$459
ELS II - 8 User 2.15	989
Advanced 286 2.15	CALL
SFT 286 2.15	CALL
386 Netware	CALL

FULL SET-UP & INSTALLATION AVAILABLE

MITSUBISHI

Laptop 286-12, 20Mg,
CGA Graphics $1695
Laptop 286-12, 40Mg,
EGA Graphics $2245
Desktop, 386SX, 2Mg RAM,
w/EGA & EGA Monitor . $1595

286 & 386 COMPUTERS

286-12 MHz, 1Mg RAM,
1.2 Dr., w/K.B. $595
386-SX, 1Mg RAM,
1.2 Dr., w/K.B. 795
386-20MHz, 1Mg RAM,
1.2 Dr., w/K.B. 1145
385-25, 1Mg, 1.2 Dr., w/K.B. . CALL
Other Configurations Available . CALL

MONITORS

Sony 1304 m/s	$659
Sony 1302 m/s	545
Sony 1320 VGA	439
Everex VGA	349
NEC 3D	589
NEC 4D	1139
NEC 5D	2295
Hyundai VGA	349
Hyundai Mono	85
Gold Star EGA	315
Gold Star VGA	349

HEWLETT PACKARD

LASER JET III w/Toner	$1535
LASER JET IIP w/Toner	949
LASER JET IID w/Toner	2345
SCANJET PLUS w/INTF	1385
PAINTJET XL	1595

JETRAM MEMORY UPGRADES
LASER III & IIP

1Mg	$189
2Mg	275
3Mg	365
4Mg	455

LASER II & IID

2Mg	$229
4Mg	379

GRAPHIC CARDS

Video 7 VRAM 512	$439
1024L 256	229
Paradise Plus 16	205
Orchid Designer+, 512	349
Everex VGA, 1024	209
VGA Card	119

MODEMS

Hayes 2400 External	$325
V-Ser. 9600 B, V.42	745
US Robotics HST	595
HST Dul. Std.	990
Everex 2400 External	199
Digitan 2400 Internal	99
Mitsubishi 2400 External	129

NEC LAPTOPS

NEC Ultralit 1 MB Silicon Disk	$1495
NEC Prospeed 286 w/20 MB HD	2625
NEC Prospeed 286 w/40 MB HD	2875
NEC Prospeed 386 w/40 MB HD.	CALL
NEC Prospeed 386 w/100 MB HD.	CALL

PRINTERS

Okidata	320/321	$349/475
	390/391	475/645
Epson	LX810	$187
	FX850/1050	349/475
	LQ850/1050	539/755
	LQ2550	895
	LQ510	299
	LX810	175
	LQ1010	475
	EPL600	959
Citizen	HSP500	315
	HSP550 Wide	435
	GSX140 24 Pin Color	319
Toshiba	321SL/341SL	435/639
	311/310 Portable	CALL
Panasonic	1124	295
	1595	399
Okidata 380 Demo, w/cable		320
Panasonic 1595		335
Fortus 132 Col.		299
Citizen 180D		159

HARD DISKS

Others Available

20Mg.	$215
40Mg	349
80Mg	559
Maxtor 157Mg, ESDI, 14ms	CALL
Maxtor 360Mg, ESDI, 14ms	CALL
Maxtor 677Mg, ESDI, 16ms	CALL
Priam 75Mg, 12ms	599

BACK-UPS

Sysgen 60Mg Internal w/o cont $365
Everex 125Mg Internal, w/cont . 965
TallGrass, FS80, w/cont,
Internal, 120 645
Other Types Available

MATH CO-PROCESSORS

80387 33/25	$549/449
80387 20/16	369/295
80387 SX	285
80287 10/8	219/189
80C287A	265
II 287-10	195

PRICES ARE SUBJECT
TO CHANGE WITHOUT NOTICE
Limited Time/Stock

covers the Golden State from the North Coast redwoods to the Mexican border. European Challenge adds the French Riviera, the Swiss Alps and the German autobahns.

The Mac version of the program allows a limited number of hard-disk installations. The car and scenery disks are not copy protected. The jazzy music and vroom-vroom sound effects can be separately toggled on or off. The program keeps detailed performance records. Documentation is minimal. You can crash and die, run out of gas, or even get pulled over by the Highway Patrol. Art imitates life. (Accolade, 550 S. Winchester Blvd., San Jose, CA 95128, 408/985-1700.)

HALLS OF MONTEZUMA

Published By: Strategic Studies Group
For: Mac, PC, Apple II
Suggested Retail: $39.95

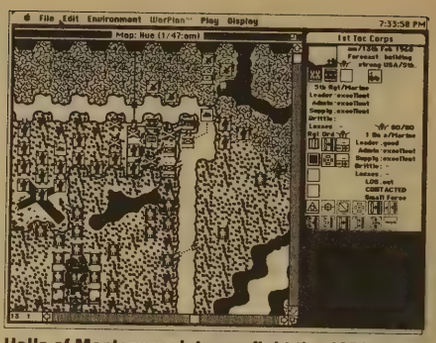
Halls of Montezuma is the best Macintosh implementation of the style and feel of tactical wargaming. The design team of Roger Keating, Ian Trout, Andrew Taubman, Malcolm Power and Gregor Whiley, successfully converted a game system developed for 8-bit computers (Apple II, Commodore 64) to take advantage of the higher speed and superior graphics found on 16- and 32-bit computers (Amiga, Macintosh, Apple IIGS).

The game offers a choice of seven battles from the long history of the U.S. Marines: Mexico City 1847, Belleau Wood 1918, Iwo Jima 1945, Okinawa 1945, Pusan Perimeter 1950, Inchon 1950, and Hue (The Tet Offensive)1968.

Each battle has monochrome and color versions. On a large monitor, the program can display full-screen map windows. The game is playable on the small Mac Plus or SE monitor, but you have to scroll around a lot to get the tactical Big Picture.

The computer can play either side of a battle. In fact, it can play both sides, while you sit back and enjoy the mayhem. The computer opponent is programmed to snatch every possible victory point. Victory conditions are based on relative casualties and possession of key objectives.

The game system gives the player command of up to three divisions. Each division consists of several regiments, and each regiment contains several battalions, which are the basic fighting units. Using a floating palette of selection buttons and command icons, you assign missions and resources to your battalions—deploy, delay, defend, support, probe, prepare, assault, exploit. Regiments with attack orders will move toward objectives you assign; regiments with defensive missions try to protect their assigned objectives.

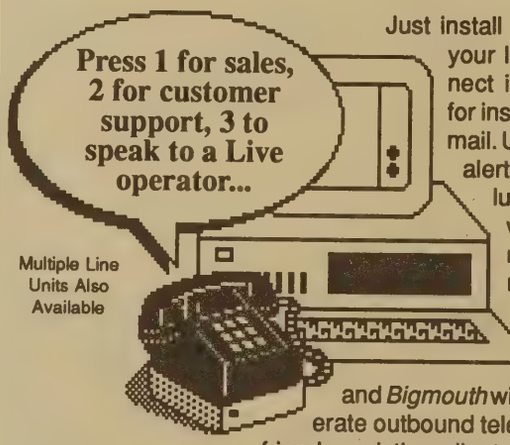


Halls of Montezuma lets you fight the 1950 battle at Inchon all over again.

Halls of Montezuma fills two 800K disks. The program includes a "construction set" that lets you modify the battles, or design your own. Documentation for this feature is incomplete, however. The manuals are well-produced, but poorly written. SSG cut corners by trying to make one set of manuals cover Amiga, Macintosh and Apple IIGS versions. Bad idea.

SSG's next Macintosh releases will be Decisive Battles of the American Civil War: Volume Two, which includes Gettysburg, and Panzer Battles, which recreates tank warfare on the Russian Front. (Strategic Studies Group, 1747 Orleans Court, Walnut Creek, CA 94598, 415/932-3019.) ■

Give Your PC a BigMouth™!



Just install a *Bigmouth* card in your IBM clone, and connect it to your telephone for instant electronic voice mail. Use it to answer calls, alert your beeper or cellular phone, or set-up voice mailboxes to record personal messages.

Add the optional Goldmine software module, and *Bigmouth* will automatically generate outbound telephone calls to your friends, existing clients, or new prospects for sales and telemarketing purposes.*

Bigmouth can even be used to operate your own pay-per-call service using credit cards, passwords, or a nationwide 900 number making it an excellent business opportunity for entrepreneurs.

Bigmouth arrives complete with menu-driven software, external speaker, peripherals directory, and a detailed instruction manual.

ID# 1840 Bigmouth $299.00 • ID# 1841 Goldmine $99.00

* Check state regulations before using the Goldmine module

24-Hour Demonstration Line
1-818-772-7729
Press 5 When Prompted

MasterCard VISA

DemoSource℠

8646 Corbin Avenue • Northridge, CA 91324

Trademarks represented belong to their respective companies

Wholesale prices to the Public!

Own a Laser Printer?
Introducing a new 3 in1 toner cartridge system at 10-15% below your present costs.

Own a PC, Mac, Laptop or Workstation?
We have memory upgrades for all systems at prices you can't beat !

Own a copier?
Let us provide you with a higher quality PELIKAN toner at lower prices.

CALL
(714) 251-9310

Technology

Dealer inquiries welcome

COMPUTER SUPPLY CLUB

"GET SWAP MEET PRICES EVERY DAY"

PC / XT

PC / XT System Board 10MHZ
8 Slots 640K on Board
150 Watt Power Supply
Keyboard (101)
2-360K Floppy Disk Drive
Floppy Controller
At Jr. Case
w / Mono Monitor & Card
Fully Assembled & Tested
1 Yr. Warranty on Full System
*** $500.00 ***

Hardware

Floppy Drive Controller	$ 15.00
Monochrome Graphics Card w. Parallel Port	$ 36.00
Color Graphics Card w / Parallel Port	$ 36.00
EGA Card (640x350)	$120.00
16 Bit VGA Card (800x600) / (1024x768)	$160.00
Hard Drive Controller for XT Controls MFM	$ 52.00
Disk Drives: 360 K / 1.2 Meg / 720K / 1.44 Meg	$62.00 / 81.00 / 75.00 / 85.00
Hard Floppy Controller for AT(WA3)	$100.00
Disk I / O Par, Serial, Game, Clock	$ 40.00
Multi Disk Controller / Controls 360K, 720K, 1.2, 1.44	$ 45.00
10 MHZ XT Motherboard	$ 65.00
12 MHZ AT 286 Motherboard	$180.00
Case AT Jr	$ 35.00

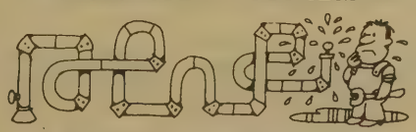
PUBLIC DOMAIN
Over 2100 Titles

$1.50/EA or

$1.00 (10 or more)

Keyboard 101 Key	$ 35.00
Keyboard 101 Key "Click"	$ 45.00
Keyboard 101 Key Keytronics	$ 55.00
150 Watt Power Supply	$ 40.00
200 Watt Power Supply	$ 50.00
Serial Card	$ 15.00
Parallel Card	$ 12.00
AT I / O Card, Parallel, Game, 2-Serial Ports	$ 38.00
Game Card (2 Ports)	$ 10.57

WE SERVICE MOST IBM



COMPATIBLE COMPUTERS.

FEE BASED ON PARTS ONLY

386 Computer

386 System Board 25 MHZ
1 Meg on Board
230 Watt Power Supply
Keyboard (AT Style)
1.2 Drive
FD / HD Controller
Full Size Case
1 Yr. Prices & Labor Warranty
*** $1200.00 ***

PC/AT

PC/AT 286 System Board
640K on Board
200 Watt Power Supply
Keyboard (AT Style)
(1) 1.2 Meg Drive
HD/FD Controller
(1) Parallel & (2) Serial Ports
w/Mono Monitor & Card
Fully Assembled & Tested
1 Yr. Warranty on Full System
*** 12MHZ - $800.00 ***

CHECK OUT

THESE EVERY DAY LOW PRICED ITEMS

Switch Boxes & Cables

2 Way Centronics (CN36AB)	$ 17.00
4 Way Centronics (CN36ABCD)	$ 23.33
2 Way Centronics Crossover (CN36ABX)	$ 30.67
2 Way Serial (DB25AB)	$ 11.93
4 Way Serial (DB25ABCD)	$ 18.67
2 Way Serial Crossover (DB25ABX)	$ 24.00
IBM Printer Cable - 6' / 10'	$3.10 / 4.25
12' / 24'	$6.23 / 12.79
Serial 6' Cable Male-Male / Male-Female	$ 4.27
Centronics Male-Male 36 Pin 6'	$ 4.53

STORE HOURS

Mon-Fri	10:00 am - 7:00 pm
Sat	10:00 am - 5:00 pm
Sun	12:00 am - 4:00 pm

ORANGE COUNTY STORE LOCATIONS

18318 Beach Blvd.	7025½ Katella
Huntington Beach	Stanton
North of Beach/Ellis	NE Corner Knott/Katella
714-848-4338	**714-821-1210**

★ ★ **NOW OPEN** ★ ★

5¼" Diskettes

DS / DD w / Sleeves (min 10)	$ .28
100 or more	$ .26
Color DS / DD Diskettes (15 Colors - Includes Sleeves & Labels)	$ .45
Color High Density (15 Colors - Includes Sleeves & Labels)	$ .75

Modems

300/1200 Internal	$ 60.00
2400/1200/300 Internal	$ 85.00
2400 Baud External	$110.00

Monitors

Monochrome Monitors: Amber / 12" Flat / 14" White	$75.00 / 85.00 / 100.00
Color Monitor (640x240)	$200.00
EGA Monitor (640x350)	$310.00
VGA Monitor (640x460)	$350.00
Multisync Monitor (800x600)	$400.00

SOFTWARE & BOOKS NOW IN STOCK

Mice

Logitech Hi-Rez Mouse Bus / Serial	$88.00 / 75.00
Logitech Hand Scanner 400 DPI	$175.00

Hard Drives

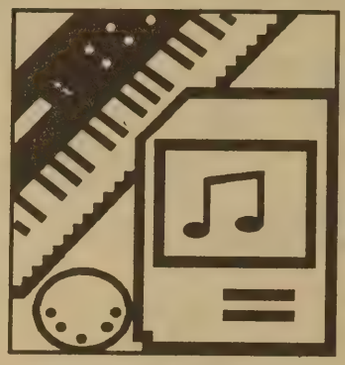
20 Meg ST-225 MFM	$218.00
20 Meg / 40 MS / ST-125 MFM	$240.00
30 Meg w / Controller ST-238R RLL	$300.00
30 Meg / 40 MS / ST-138 MFM	$315.00
40 Meg / 28 MS / ST251-1-MFM	$330.00

WE CARRY OVER 100

STYLES OF RIBBONS

*PRICES ARE CLUB MEMBER PRICES - MEMBERSHIP IS $5.00/YR. - NON-MEMBERS PAY 10% MORE

PRICES AND CONTENTS SUBJECT TO CHANGE WITHOUT NOTICE



We've Moved to a NEW LARGER LOCATION

Our NEW ADDRESS is 14947 Ventura Blvd. In SHERMAN OAKS!

Help Us Celebrate!

GRAND OPENING NEW LOCATION

SAVE UP TO 60%

-SPECIALS-

Voyetra IBM Midi Studio Complete W/Software,Interface & Kawai Keyboard **$499**	IBM & ATARI Ed/libs by Midiman (MusicSoft) **$59**	SENTECH MIDI 2x8 Thru Box **$59**	Software Midi Sequencers From **$59**	6 Ft. MIDI Cables Only **$4.99**	Kawai Midi Keybds From **$149**
Atari 1040ST/MEGA W/Mono Monitor **IN STOCK ON SALE!**	Roland NEW CM Sound Module from **$499**	Passport Midi Hits of the 30's thru 80's **$39**	Band in a Box Auto Accomp w/Midi Fake Book **$79**	Opcode EZVision & Mac Interface **$199**	IBM Midi Starter System **$179**
Sound Quest Midi Quest Atari PC Amiga Universal Ed/Libs **In Stock!**	Sound Source D50 Sounds Atari Mac Disks **$15**	Bo Tomlyn's Great Sounds From **$15**	Yamaha C1 W/20HD Music Computer **$2599**	Sony Bulk Disks Only **89¢ ea.**	Midi Master Keybd Only **$99**

L.A.'s Largest Inventory of Music Software for the Computer Musician. L.A.'s Most Experienced Midi Consultants. 16 Track/Midi Production Studio. Digital Recording Systems; Studio Automation Systems; Amiga, Atari, Mac, PC Computers, Sounds for Synths/Samplers; Keyboards; Accessories & More.

--Music/Midi BBS (818) 789-4287

Sign Up for our FREE Monday Midi Seminar!

The Electronic Music Box

Our NEW ADDRESS is 14947 Ventura Blvd.

Sherman Oaks Phone (818) 789-4250

ELECTROCOMPUTER ADVANCED PRODUCTS

ROCK SOLID PERFORMANCE • SUPERSTORE PRICING

FINANCING EAP SYSTEMS AVAILABLE

All systems are fully tested • 1 year warranty parts and labor •

EAP 80386 SYSTEM

Deluxe Case w/Digital Display
AT 80386 Motherboard w/1MB RAM
on board, exp. up to 8MB
32 bit 80386 Intel CPU
1.2MB Floppy Drive
1:1 Interleave FDD/HDD Controller
40MB Hard Disk Drive (28ms)
AT Multi I/O (2 Ser/1 Par/Game)
101 Enhanced Japanese Keyboard
Display Adapter and Monitor

	VGA	EGA	CGA	MONO
80386SX	$1680	$1656	$1464	$1315
20MHz	2010	1986	1794	1645
25MHz	2135	2111	1919	1770

25MHz w/64K CACHE .....ADD 400
33MHz w/64K CACHE .....ADD 984
EXP. TO 256K CACHE .....ADD 300
w/65MB HDD (22ms) .....ADD 90
w/80MB HDD (28ms) .....ADD 210
w/150MB HDD (18ms) .....ADD 548

EAP 80286 SYSTEM

Deluxe Case w/Digital Display
80286 Motherboard w/1MB RAM
on board, exp. up to 4MB
1.2MB Floppy Drive
1:1 Interleave FDD/HDD Controller
40MB Hard Disk Drive (28ms)
AT Multi I/O (2 Ser/1 Par/Game)
101 Enhanced Japanese Keyboard
Display Adapter and Monitor

	MONO	CGA	EGA	VGA
12MHz	$1165	$1314	$1506	$1530
20MHz	1265	1414	1606	1630

w/65MB (22ms).....ADD 90
w/80MB (28ms).....ADD 210
w/150MB (18ms).....ADD 548

EAP XT-TURBO 10MHz

Deluxe Case, 2 Buttons, 3 LED's
XT Motherboard 8088 4.77/10MHz
640KB of RAM on board
XT Multi I/O (Clock/Ser/Par/Game)
2 - 360KB Floppy Drives
101 Enhanced Keyboard
Display Adapter and Monitor

	MONO	CGA	EGA	VGA
	$490	643	845	912
w/20MB	755	908	1110	1177
w/30MB	780	933	1135	1202
w/40MB	880	1033	1235	1302

MICRONICS — SUPER CACHE SPECIALS!

MADE IN USA MOTHERBOARDS

- 80386-20 MHZ W/65MB HARD DISK, 1024X768 VGA
- 80386-25 MHZ W/80MB HARD DISK, 32K CACHE, 1024X768 VGA
- 80386-33 MHZ W/150MB HARD DISK, 64K CACHE, 1024X768 VGA

CALL FOR OUR LOW PRICES

WE DO NOVELL NETWORKING

NVL-ELS NOVELL ELS I (4 USERS)
NVL-ELS NOVELL ELS II (8 USERS)
NVL 2.15 NOVELL ADVANCED NETWARE (100 USERS)

CALL FOR CONFIGURATION ESTIMATES - Portables & Laptops!
Dealer Inquiries Welcome

Call for memory chips, printers or any options. We also offer service, repair and upgrades. Service and maintenance contracts available for companies and home users.

CAD WORKSTATION FOR THE 90's!

MICRONICS 386-33 MHZ W/64K CACHE
SUPER TOWER CASE W/230W POWER SUPPLY
INTEL 80386-33 MHZ WEITEK 1167/3167 SOCKET
INTEL 80387-25 MHZ MATH CO-PROCESSOR
8 MEG 70NS RAM ON BOARD-EXP. UP TO 16 MB
65 MB NEC HARD DISK (22MS)
1.2 MB & 1.44 MB FLOPPY DRIVE
2/SERIAL/1 PARA/GAME AT I/O
KEYTRONIC 101 ENHANCED KEYBOARD
20" MITSUBISHI DIAMOND SCAN MONITOR HA 3905
SUMMAGRAPHIC 12"X12" DIGITIZER
HP 7575-A DXL PLOTTER

Complete System
LOW PRICE
CALL FOR DUAL SCREEN OR CUSTOMIZED CONFIGURATIONS

OPTIONS & ACCESSORIES

CAD WORKSTATION ENHANCEMENTS

DISPLAY CONTROLLERS
* CONTROL SYSTEMS ARTIST 10/12/16
* CALCOMP CALCOMP 3101/3102/3201
* VERMONT MICROSYSTEMS VMI IMAGE MANAGER/COBRA

PLOTTERS
* CALCOMP — ALL MODELS
* HP — ALL MODELS
* IO LINE — ALL MODELS
* QMS POSTSCRIPT LASER PINTERS

ACCESSORIES
LARGE/SMALL DIGITIZERS
* HITACHI
* SUMMAGRAPHIC
* CALCOMP

MATH CO-PROCESSORS
* INTEL
* WEITEK

CALL FOR PRICING ON ALL MODELS

MONITORS
* MITSUBISHI DIAMOND SCAN 19"
* HITACHI 4319 20"
* NANAO 9070 16"
* NEC 3D/4D/5D/MULTISYNC XL 19"
* MAGNAVOX PRO VGA 14"

CALL FOR LOW PRICES

HARD DISKS
* SEAGATE
* MITSUBISHI
* NEC
* KYOCERA
* MINISCRIBE
* MAXTOR

PRINTERS
* PANASONIC
* EPSON
* HP LASER JET
* STAR MICRONICS

Please Call For Prices and Configurations Not Listed

714-554-3892

EAP GARDEN GROVE
14351 Euclid St., Unit R
Garden Grove, CA 92643
FAX: 714-554-8169
EUCLID BUSINESS CENTER

MasterCard
VISA
Add 3% for VISA/MC Purchases
PRICES SUBJECT TO CHANGE

818-919-6110

EAP WEST COVINA
154 S. Glendora Ave.
W. Covina, CA 91790
FAX: 818-919-7214
1 BLOCK FROM FREEWAY 10

Networking Your Mac
continued from page 50

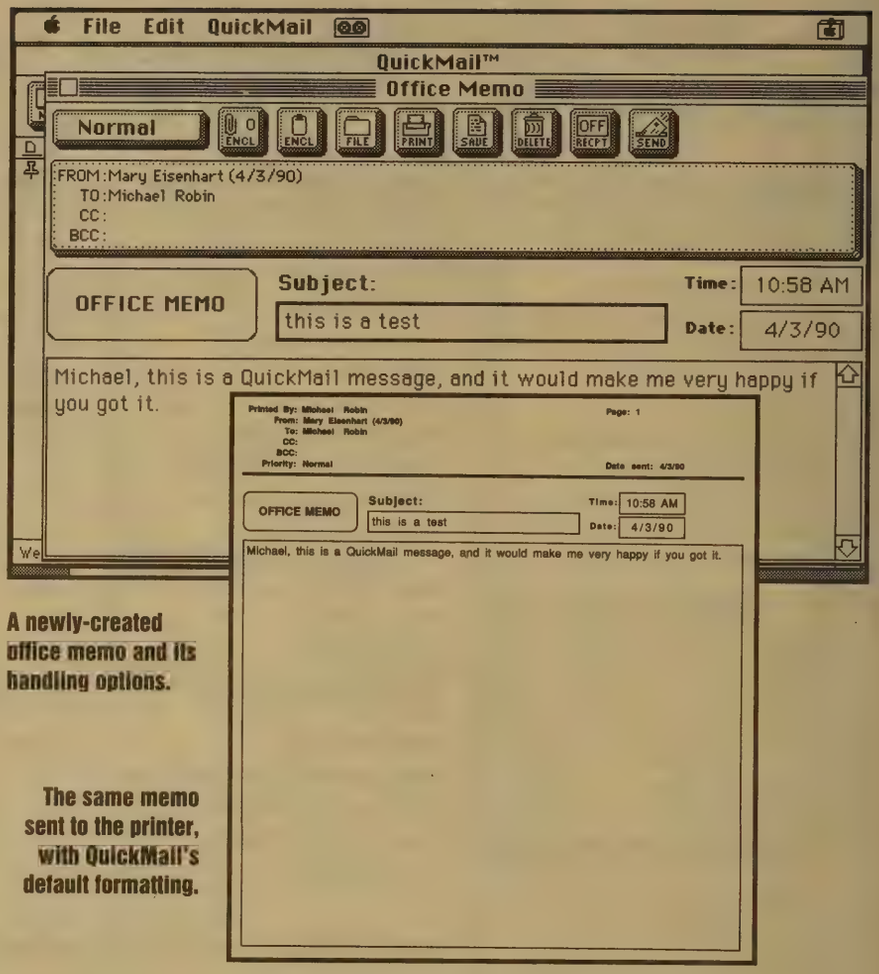
name, and password (if you decide to assign passwords to users—otherwise, leave it blank), then click **Add**. Be sure to include yourself if you need to be in this group. When you're done, click **Done**. Designate one user as the Custodian for each MailCenter; the Custodian adds and deletes names from the user list and routes mail that can't find its proper destination.

USER INSTALLATION

Now pick up your manuals and disks and go visit the people you just assigned to the mail center. Give each of them a copy of the User Manual. Follow the installation instructions (which usually consist of nothing more than double-clicking QuickInstall and letting things take their course) to put QuickMail on each machine, and when you get the dialog box asking you to restart, do it.

Each user should now get a QuickMail login screen on startup. Using the pop-up menus, the user selects the appropriate MailCenter and user name, and logs in (if the *user* forgets the password at this level, you can go back into QM Administrator and assign a new one).

QuickMail should now be listed as a desk accessory under the menu. To access it, just click on its name.



A newly-created office memo and its handling options.

The same memo sent to the printer, with QuickMail's default formatting.

SENDING AND RECEIVING MAIL

QuickMail gives you many options for formats, file transfer and information allocation. You can print documents directly from QuickMail or designate the printer as a MailCenter and route incoming messages to it for hard copy. You can set up your modem as a MailCenter and have it retrieve your mail from online services and route it to you.

In our case, Steve, Michael, and I mainly need to exchange the occasional note, but more often Michael has written an article that I need to edit, or I have spent three days working on a database that Michael needs to format into reports, or I owe Steve a review and am too lazy to walk it into the next room.

No problem. From inside QuickMail, click the **New** button, which allows you to select a variety of formats from the menu (from Office Memo to While You Were Out). You type in whatever message you consider appropriate, and if you want to enclose one or more files, just click the **Enclosure** button. You'll get another dialog box, much like the one you know from the **Open** command in every Mac application ever created. Select the file you want to enclose. Click the **Send** button, and off it goes to its appointed destination.

THE FUTURE

Obviously, the three of us are barely scratching the surface of what QuickMail can do. The beauty of the product is that it's pretty reasonably priced even if you don't do any more than we're doing right now, and it allows you to move into more sophisticated operations from the same package as your needs expand. I look forward to the happy day when our receptionist puts all my phone messages into QuickMail, for instance. And the LA office can get messages to everybody's Mac overnight. But that's for another day.

We've found CE a joy to deal with in support matters. True, phone support is on your nickel, 9 am to 5 pm Central time on weekdays, but our experience has been that response is prompt and accurate. CE really shines in the area of online support, with access through CompuServe, GEnie, MCI Mail, CONNECT, AppleLink, and America Online, checked frequently and promptly answered.

Networking raises all manner of technical and other issues that don't arise in the single-user setting. Also, Macs are getting more complicated by the day, and conflicts between applications (especially INITs) are increasingly common. In general, we've found QuickMail very well-behaved with a wide range of applications. About the most dramatic problem we've encountered is that QuickMail (quite properly, we think) makes extensive use of command-key equivalents so you don't have to pull down frequently-used menus all the time. Unfortunately, these may conflict with something you've got set up in MacroMaker or some other program that lets you configure such matters: Michael has discovered that half the commands in his customized Word call up QuickMail screens, so there's going to be some interface-tweaking in his future. In the course of making screen dumps for this review, I also discovered that Command-Shift-3 not only makes the screen dump perfectly well, but also opens a new Routing Request (invoked as Command-3).

QuickMail is available in a 5-user pack for a suggested retail price of $339.95, 10-user for $499.95, and 50-user for $2,299.95. Single-user packs are $189.95, and a single-user add-on package is $89.95. (CE Software, 515/224-1995) ■

THE SINGLE SOURCE SOLUTION

COMPUTER BUSINESS CENTER (213) 452-2027

2811 Ocean Park
Santa Monica, CA 90405
We Will Try to Beat Any Advertised Price

EPSON

LQ-510	$379
FX-850	349
LQ-1050	749
FX-1050	469
LQ-850	529
LQ-2550	939

JACOBSON SUPER 386/SX

- 80386 SX/16MHz
- 1MB RAM
- 1-1.2 Floppy
- 40MB
- HD/FD Controller
- AT Style Keyboard
  101 Key Keyboard
- Monographics
- TTL Amber Monitor w/Swivel
- 200 Watt Power Supply
- Parallel/Serial/Game Ports
- Clock/Calendar

$1395

FREE SOFTWARE

• Home Budget Manager • Form Master • Express Check • Spread Sheet • Word Processing • Data Base • Typing Tutor • Computer Tutor • Menu

JACOBSON SUPER AT

- 80286-10 6/10 MHz
- 640K RAM
- 1-1.2MB Floppy Drive
- 20MB Hard Drive
- HD/FD Controller
- AT Style Keyboard-101 key
- Monographics
- TTL Amber Monitor w/Swivel
- 200 Watt Power Supply
- Parallel-Serial-Game Ports
- Clock-Calendar
- 1 Year Warranty

10 MHz.....$1099
12 MHz.....$1249

FREE SOFTWARE

• Home Budget Manager • Form Master • Express Check • Spread Sheet • Word Processing • Data Base • Typing Tutor • Computer Tutor • Menu

MONTHLY SPECIALS

PACIFIC DATA 25/1 Font	$275
PACIFIC DATA Postscript Series II	450
PACIFIC DATA Postscript Series IIP	350
HP Laser Series II Memory OK	99
HP Laser IIP Memory 1MB	195
HP Laser Series III Memory 1MB	195

COMPAQ

Laptop SLT 20MB/40MB	$3605/3995
DeskPro 286 12 MHz 20MB/40MB	1599 1889/2049
DeskPro 386/20E 40/110MB	4589/CALL
DeskPro 386S MDL 40	3299
Portable III MDL 20/40MB	3449/3949
Portable 386 20MHz 40 MB	5429
Portable 386 20MHz 100 MB	6829
DeskPro 386 25 MHz 110MB/300MB	CALL
DeskPro 286E	1799

All Compaq Memory

STEP 286-12	$1400
STEP 286-16	1500
STEP 386-20	2500
STEP 386-25	2990
STEP 386-SX	1750

AGI Computer, Inc.

286-10 MHz	$857
286-12 MHz	1145
386-16SX	1575
386-20 MHz	1895

IBM

IBM 8530-286 512K, 80286, 10MHz	$1390
IBM 8530-286 640K, 80286, 10MHz, 20MB	1775
IBM 8550-Z031 1X30MB, 80386 (10MHz) 1MB	2195
IBM 8550-Z061 1X60MB, 80386 (10MHz) 1MB	2390
IBM 8555-SX061 1X60MB, 80386 (16MHz) 2MB	2990
IBM 8560-071 1X70MB, 80286 (10MHz) 1MB	3745
IBM 8570-121 1X120MB, 80386 (16MHz) 2MB	5090
IBM 8580-111 1X115MB, 80386 (20MHz) 2MB	CALL
IBM 8580-314 1X314MB, 80386 (20MHz) 2MB	CALL

IBM LAPTOPS

IBM P70 1.44 DR, 386, 60MB, 20MHz, 4MB	$5220
IBM P70 1.44 DR, 386, 120MB, 20 MHz, 4MB	5550

IBM MONITORS

IBM 8503 Monitor 12" (mono)	$190
IBM 8512 Monitor 14" (color)	430
IBM 8513 Monitor 12" (enhanced color)	520

TAPE BACK-UP

40/60 MB Internal	$319
40/60 MB External	419

60 Meg EXTERNAL ARCHIVE
LIMITED QUANTITY SPECIAL

only **$549**

Irvin 40MB Internal	$419
Irvin 40MB External	599

OKIDATA

320/321	$365/479
390/391	479/657
393	995
292/293	CALL

TOSHIBA

321SL/341SL (216 CPS)	$455/625
351-SX/351-2 Color	925/995
Toshiba T1000SE	CALL
T1200HD/T3200SX	1849/3950
T1600/T3100E	$2995/2595
T5200-40/100 MB HD	4629/4949
2400B Modem Int	249
Special 351-2	795
Toshiba 5200 40/100	4600/4995

NEC MONITORS

Multisync IIA	$499
Multisync 3D	599
Multisync 4D	1225
Multisync 5D	2250

SONY MONITORS

1302 13", CGA,EGA,PGA	$599
1303 13", CGA. EGA. VGA, PGA	449
1320 13", VGA only	475

APPLE

MAC IIX 1 Drive	$3650
MAC IIX, 1 Dr., 40MB	3950
MAC IIX, 1 Dr., 4MB RAM, 50 MB	5049
MAC IICX, 1 Dr./ 1MB	3100
MAC IICX, 1Dr./1MB/40HD	3600
MAC IICX, 1 Dr./4MB/50HD	4949
MAC II, 13" Color	690
ImageWriter II	419
ImageWriter LQ	989
Laser SC	1880
Laser NT	3300
Laser NTX	4599

TANDON

80286, 10 MHz, 1 MB RAM, Mono Monitor & Card, Keyboard, 20MB **$1595**

HEWLETT PACKARD

LaserJet Series 3 w/T&C	$1695
DeskJet +	699
QMS Postscript board for LaserJet	1795
HP Laser IIP	995
ScanJet + I/O	1395
PaintJet	995
Toner	89
Plotter 7475/7440	1325/899
ThinkJet	359

AST PREMIUM 286 & 386

AST Premium 286	$995
AST Bravo System	CALL
AST Premium 286 with 20MB w/Monitor	1598
AST Premium 286 with 40MB w/ Mono Monitor	1788
AST Model 386C	2600
AST Model 386C with EGA	2700
Model 386C with 40MB	2995
Model 386C with 70MB	3295
AST 386C with VGA Monitor	3100

PANASONIC

1180	$190
1124-24 Pin	325
1524-24 Pin 132 Column	520

COMPAQ · FUJITSU · intel · AST · HEWLETT PACKARD · IBM · Seagate · Tandon · CITIZEN · TOSHIBA · SAMSUNG · EVEREX · EPSON · DELTAGOLD · NEC · Acer

It's Easy To Share

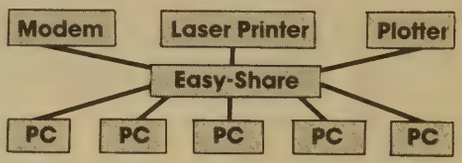
Now Available In All Parallel Port Configurations

2 Year Warranty

Easy-Share
The Peripheral Sharing Solution

Now you can quickly and easily share your printers, plotters and modems with your computers. Easy-Share automatically buffers and routes your data to the desired output device, eliminating cable or diskette swapping and manual switchboxes.

Easy-Share doesn't require any special software to operate. It easily connects to your computer's serial or parallel ports and is compatible with all of your application software.



• Share up to 8 PCs and peripherals with Easy-Share

Easy-Share Gives You:

Easy Configuration
You can configure each port as "input" or "output"–allowing you to connect 7 computers to 1 printer, 6 computers to 2 printers, or any combination of up to 8 ports. And each port can be configured independently for Parity, Wordlength, Baud Rate, Input/Output operation as well as for "handshake" method (DTR/XON).

Easy Operation
Easy-Share automatically transfers data and performs any required switching. There are NO OPERATOR CONTROLS or switches to set. And, any or all "on-line" users can send documents at the same time. Buffer space is automatically allocated to insure maximum efficiency.

Easy Expansion
Easy-Share has 4 serial ports standard, and is expandable up to 8 ports. Plug-in interface cards allow for serial or parallel expansion. Plus, Easy-Share comes standard with 256K of RAM and is expandable to 1 megabyte of internal onboard RAM!

PLUS THESE OTHER FEATURES, FREE!

Bi-Directional Mode
Easy-Share supports a special bi-directional mode allowing the use of Modems, Plotters, or even the exchange of files between computers (requires user provided file exchange program).

Advanced Software Command Support
Easy-Share supports advanced software commands, including: Number Of Copies, Pause For Paper Change, Printer Select, Bi-Directional Modem Support, No Timeout (for Accounting Audit Trail Use), and others.

CALL TODAY AND SEE why Fortune 1,000 companies all over California have made Easy-Share their peripheral sharing solution.

FIND OUT HOW EASY (and inexpensive) it can be to share your peripherals in your own company with Easy-Share!

CALL NOW
1-800-776-5676

TANSTAAFL Manufacturing, Inc.
1800 Wyatt Drive, Suite 6
Santa Clara, CA 95054

Missing Your Copy of MicroTimes?

If you're having trouble finding MicroTimes at your favorite store, why not have it delivered right to your company.

If you're a company that can distribute 50 or more copies per month, just call our distribution department at 213-467-7878, and ask to have MicroTimes delivered to your doorstep. It's SO EASY!

1800 N. HIGHLAND, Ste. 506 • HOLLYWOOD, CA 90028

Industry Insights
continued from page 20

technology that they copied. Instead of sending the usual nasty have-your-lawyer-talk-to-my-lawyer letter, Pat O'Haren, Farallon's OEM sales manager, simply asked that each company contact Farallon for further negotiations. Almost everybody responded, and Farallon says that it is likely that the majority will agree to terms without having to get into any legal disputes.

MACWORLD EXPO ROUNDUP

The most common complaint among the folks who had been in the Macintosh industry since 1984 was that there was a much higher proportion of people wearing suits at this year's Macworld Expo than last year. The most common praise that exhibitors had this year was that there was a much higher proportion of people wearing suits.

This year's show had almost no new products, just feature-laden upgrades. As sad as that sounds, it seems to be exactly what the majority of attendees wanted. The quest for the familiar goes beyond the Mac's look and feel, all the way to the heart of how the market moves.

The most crowded booths were those of major manufacturers like Aldus, Adobe, and Microsoft. In previous years, nifty utilities and hardware from tiny companies garnered big crowds and lots of talk. This year, all the "action" (if you can call it that) was in the big booths. People wanted to know what new features for the programs they already had were coming down the line. The few new products were mostly me-too programs with slight rearrangements of the feature lists.

A few large manufacturers were demonstrating applications that showed off many of the Mac's features that users have come to know and love. For example, Odesta was showing its Document Management System, a highly integrated system for tracking documents in companies such as magazine publishers. ODMS shows that the Mac interface is still an excellent vehicle for integrated applications in which users are not computer-literate.

Of course, large manufacturers are happy that customers are now content with featurism. Companies like Microsoft can get quite rich off of upgrades, many of which cost more than $100 apiece. The few large companies that have cheap upgrades (such as Central Point Software) may lose some money, but they too do not need to worry about coming up with too many new ideas in order to keep revenue coming in. ■

PRINTER (With Cable)

* PANASONIC 1180/124/1624/1524	$179/294/444/529
* EPSON LQ510/850/1050/2550	$359/535/735/959
* LX810/FX850/FX1050	$189/359/475
* OKIDATA 390/391/320/321	$ 460/635/335/460
* FUJITSU DL 3400	$459
* STAR NX1000/2400	$169/309
* CITIZEN GSX-140 (Color option)	$329

KEY BOARD & POWER SUPPLY

XT 84 KeyS K/B	$19	230W	$49
AT/XT 84 Keys K/B	$29	150W	$29
BTC 101 Keys K/B	$34	165W	$32
AMPTROn 101KY.Clk.K/B	$39	200W BABY	$42
FUJITSU 101keyS K/B	$44	200W AT	$44

DIRECT TO ENDUSER

SUPER 386-SX SYSTEM

- ✳ Deluxe Mini Vertical Case + 200W P/S
- ✳ 386-SX 16MHz w/1MB Installed
- ✳ 0 Wait State, AMI Or Phoenix Bios
- ✳ 1:1 Dual FD/HD Controller
- ✳ 1.2MB 5¼" Floppy Drive
- ✳ AT 2S/1P/1G
- ✳ Hercules Compatible Card + Monitor
- ✳ Enhanced Deluxe Keyboard

$820

- ✳ 40MB 28MS Add $289
- ✳ 1.44 Floppy Add $67
- ✳ VGA System Add $275

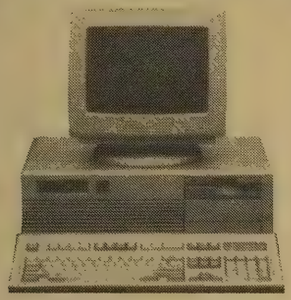
CADD SYSTEM

- ✳ Deluxe AT Case + 230W P/S
- ✳ 386-25MHz M/B w/1MB Installed (Exp. 16MB)
- ✳ 0 Wait State AMI Bios Set-Up Built-In
- ✳ 1:1 Dual FD/HD Controller
- ✳ 1.2MB and 1.44 Floppy Drive
- ✳ 105MB RLL 28MS Hard Drive
- ✳ 16 Bit VGA 256K Hi-Res. 1024x768 (512 Exp.)
- ✳ Super Deluxe VGA Monitor 1024x768
- ✳ Enhanced Keyboard
- ✳ AT 2S/1P/1G

$2790

- 4MB Upgrade Add $280

WE WILL BEAT ANY ADVERTISED PRICE

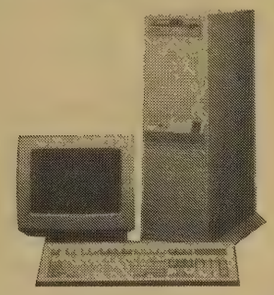


SUPER 386~25Mhz

- ✳ AT Desktop deluxe case
- ✳ 230W 110/220 Power supply
- ✳ AT 386/25Mhz motherboard
- ✳ 1 MB 80 ns memory installed
- ✳ Auto rechargeable battery
- ✳ Intel true 32 bit CPU
- ✳ 1 32 bit, 5 16 bit & 2 8 bit slots
- ✳ Socket for 80287 or 80387
- ✳ Dual DRAM socket 256/1MB DRAM expandable to 8MB
- ✳ 0 wait state
- ✳ AMI BIOS
- ✳ 2 serial, 1 parallel port
- ✳ 1:1 interleave HD/FD controller 1.44MB, 720K, 1.2MB, 360K drives
- ✳ 1.2MB or 1.44MB floppy drive
- ✳ 360K or 720K floppy drive
- ✳ 65MB 28ms RLL hard disk
- ✳ Monochrome monitor with card
- ✳ Enhanced deluxe 101 key keyboard
- ✳ MS DOS 3.30 or 4.01
- ✳ OS/2, UNIX, Novell compatible
- ✳ Technical reference manual

$1838

✳ Add $380 for 64K cache (same config as above)

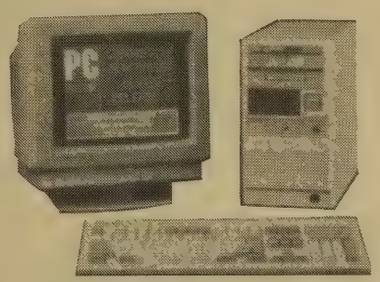


SUPER 386~33Mhz

- ✳ Super vertical case + 230W P/S
- ✳ 386/33 motherboard
- ✳ Landmark: 58.7Mhz SI: 40.1
- ✳ 1MB 70ns RAM
- ✳ Phoenix or AMI BIOS
- ✳ 64K cache memory (EXP 256K)
- ✳ 1:1 interleave dual HD/FD controller
- ✳ 1.2MB or 1.44MB floppy drive
- ✳ 360K or 720K floppy drive
- ✳ 120MB ESDI Hard disk drive 28MS
- ✳ MS DOS 3.3 or 4.01
- ✳ Monochrome monitor & card
- ✳ 2 serial, 1 parallel port
- ✳ Enhanced deluxe keyboard
- ✳ Technical reference manual

$2690

- ✳ Add $566 for Micronics M/Board
- ✳ Add $755 for Super VGA w/NEC 3D



SUPER 286~16Mhz

- ✳ AT deluxe case
- ✳ 230w power supply
- ✳ True Intel 80286- 16 CPU
- ✳ 1MB 80ns DRAM installed
- ✳ AMI BIOS Land Mark 20MHZ
- ✳ Dual HD/FD controller
- ✳ 1.2MB or 1.44MB floppy drive
- ✳ 40MB 28MS hard disk
- ✳ 2 serial, 1 parallel port
- ✳ Monochrome monitor
- ✳ Graphics card
- ✳ Enhanced deluxe keyboard
- ✳ MS DOS 3.3 or 4.01
- ✳ Technical manual

$1060

Add $275 For Standard VGA System
Add $122 For Color System
Add $67 For 1.44 Floppy
Upgrade Minivertical Case: FREE

SPECIAL Citizen Color Printer w/Kit ONLY $259

FREE AC POWER PAD & MOUSE $93 VALUE with any 386 purchase

DEALERS WELCOME CORPORATE, UNIVERSITY & GOVERNMENT P.O.'S WELCOME

MEMORY & CPU

256K-120	$2.50
256K-100	$3.00
256K-80	$3.50
1 MB-100	$8.00
1 MB-80	$9.00
1 MB-60	$10.00
256K-100 (9)	**$25.00**
256K-80 (9)	**$28.00**
256K-100 (4)	$8.00
256K-80 (4)	$9.00
8087-2	**$130.00**
8087-1	**$155.00**
80287-6	**$135.00**
80287-8	**$185.00**
80287-10	**$215.00**
80387-16	**$330.00**
80387-20	**$365.00**
80387-25	**$450.00**
80386-16	**Call**
80386-20	**Call**
80386-25	**Call**

CONTROLLERS

- FD/HD MFM 2:1	$74
- FD/HD MFM 1:1	$84
- DTC FD/HD RLL 1:1	$129
- ADAPTER SCSI	$349
- WD 1006HD	$120
- WD 1007 FD/HD	$169
- WD 1003 FD/HD	$89
- ST-01 HD ONLY SCSI	$39
- ST-02 FD/HD SCSI	$49
- VT HD MFM	$39
- SCSI FUTURE DOMAIN	$195
- RLL 1-1 AT FD/HD	$99

MONITORS

NEC XL 19" Multisync	$2190
NEC 3D 14" Multisync	$599
NEC 2A 14" Multisync	$475
NANAO 16" Multisync	$980
NEC 4D 16" Multisync	$1190
EMERSON 14"VGA	$279
Goldstar 12" Amber	$69
Goldstar 14" Color	$189
Casper 14" Flat screen	$99

MOTHER BOARDS

Micronics 33Mhz 1MB	call
Micronics 20MHZ 1MB	call
AMI 25Mhz 1MB 64K	call
386-25Mhz 1MB	call
286-16 MHz 1 MB	$287
286-12 MHz 1 MB	$237
286-12 MHz 1 MB (4 Exp.)	$257
XT-10 MHz 640K	$125
386 SX-16 MHz 1 MB	$437

HARD DRIVES

Sgte ST 4096 80MB 28MS	$520
Sgte ST-296-N 85MB 28MS	$459
Sgte ST-138N 32MB 38MS.	$250
Sgte ST-251-1 42MB 28MS	$289
Sgte ST-4144-R 120MB 28MS	$560
Sgte ST-225 21MB 65MS	$180
NEC 3142-42MB 28MS	$325
NEC D5655 150MB 18MS	$780
MS HH1060 65MB 28MS	$345
MS HH1090 80MB 28MS	$495

HARD DRIVES

MS HH1120 120MB 28MS	$690
Micropolis 1335 72MB 28MS	$540
MP 1355 145MB 23MS	$890
MP 1375 145MB 23MS	$920
Quantum 40S 42MB 19MS	$370
Quantum 40AT 42MB 19MS	$385
Conner CP3024 21MB 27MS	$350
Conner CP3044 42MB 27MS	$470

INTERFACES

GENOA 512K 1024	$199
PARADISE 8 bit VGA	$119
PARADISE 16 bit VGA	$139
VGA 16 bit TRIDENT	$115
VGA 16 bit 512K	$145
PARADISE 1024x768	$229
VIDEO 7 10241	$210
Oak VGA 800x600	$89

SALES HOT LINE: (714) 965-1760

VISA MasterCard

All products include one year warranty parts & labor

"WE ARE #1 IN CUSTOMER SERVICE"

NEXT COMPUTER PC & PERI PHERALS

(IBM COMPATIBLES)

18582 BEACH BLVD #8B-C
HUNTINGTON BEACH, CA 92648

TECHNICAL SUPPORT
(714) 965-1745
FAX:
(714) 968-1686
PAGER
(714) 938-6586

BUSINESS HOURS:
Tuesday - Friday: 9am-6pm
Saturday - Sunday: 11am-4pm
We Close Monday

PRICES ARE SUBJECT TO CHANGE WITHOUT NOTICE
CORNER BEACH - ELLIS (MAIN)

C:\A03\N163DAO

Subscribe to MicroTimes

And you'll be the winner in more ways than one! You'll get new product updates, software and hardware reviews, industry news and information, user group info, and so much more.

You'll be right on the pulse of the computing world you live in here in California. And you'll never miss a beat, because you've subscribed to MicroTimes and it's delivered to your home every issue.

Plus, in MicroTimes, you'll be able to find all the products and services you'll need to keep computing from local computer stores and businesses.

Start Our subscription-

Company Name _____

Name _____

Address _____

City _____

Please send me: ❑ Bay Area Edition ❑ L.A. Edition

Inside U.S.

❑ 1st Class $50/12 issues
❑ 3rd Class $24/12 issues
Allow 3 to 4 weeks for delivery

In Mexico & Canada $40
Overseas (surface mail) $40

❑ I have enclosed check for $_____

❑ Please charge $ _____ to Visa/MC

_____ E xp. _____

Card Name _____

Signature _____

Mail to: MicroTimes Subscriptions
5951 Canning Street
Oakland, CA 94609
(415) 652-3810

Lowest Prices In The Area

IBM®

PS II M 70-061/70 E61	$3775/3450
PS II M 70-A-21 121	6150/4195
PS II M 80-44/70 MB	3895/4500
PS II M 80-115/300 MB 20 MHz	CALL/8195
PS II M 50Z-60 MB/30	2495/2150
PS II M 30-286 M 1/21	1390/1795
PS II M 55SX—031/061	2695/2975
PS II M 70—B61/B21	8395/8795
Mono Display 8503	199
Color Display 8513/8512	539/439
8514 Adapter/Monitor	925/1190
5¼" Ext Fl Dr IBM/GEN	335/199
Pro Printer II/III/IIIXL	369/495/595
Pro Printer X24/XL 24E/XL	535/699/499
IBM Laser Printer	1750
Quiet Writer II/III	795/109
IBM DOS 4.0	100
Displaywrite 4/OS 2	279/255

If you do not see a product listed—Please call

Apple®

SALE!

Mac SE/20 MB $1999

Mac SE 2FD's	$1699
Mac SE 2 MB-40 MB HD	2250
Mac SE/30 1 FD	2599
Mac SE/30 80 MB HD	3499
Mac IICX 1 FD	3095
Mac IICX 40 MB HD	3595
Mac IICX 80 MB HD—4 MB	4199
Mac IIci 1 FD	4295
Mac IIci 40 MB HD	4695
Mac IIci 80 MB HD—4 MB	5295
Mac II FX	CALL
Mac Portable 1 FD	3999
Mac Portable 40 MB HD	4495
Laser II NT	3199
Laser II NTX	4450
Color Space IIi	2199

COMPAQ®

PORTABLES

386/40 MB HD, 1.2 Fl., 1 Meg	$4900
386/100 MB HD, 20 MHz	5600
II Model 2 2 Dr. 256K (80286)	1895
II Model 4 20 MB	2550
III Model 20 MB 1.2 Fl. 640K	3295
III Model 40 MB 12 MHz	3795
SLT 286 Model 20/40 MB HD in Stock!	CALL
Compaq VGA Adapter/Monitor	385/525
Compaq Amber/Green	195

DESKPRO MODELS

286E Model 1/20/40	$1725/1975/2450
286 640K 20/40 MEG HD	1895/1995
386-25 MHz/20E 60 MB HD	5495/4496
386-25 MHz 110/300 MB HD	6350/8295
386S Model 1/20/40 meg	2275/2545/2795
386-20E Model 40/110	4295/5395
386S/386 20 E Model 100 MB HD	2999/4350
386-33 Model 84/320/650	LOW
LTE - all models	IN STOCK

HP IIP = $969
w/Toner

HP III = $1559
w/Toner

PostScript Emulation	$475
PostScript Emulation IIP	395
25 in 1 Font Cartridge	250

Hewlett Packard

Laser Series IID	$2750
Scanjet/Plus	1065
Plotter 7475 A	1395
Deskwriter	799
1 MB Upgrade - II/IIP III	199/275
2 MB Upgrade - IIP/III	375
4 MB Upgrade - IIP/III	545
25 in 1 Font	250
Fonts: HP & Compaq	CALL

CONSULTING
IBM - Apple
Call (213) 559-0338

External Floppy Drives

5¼" 360K/1.2-PS/2	$199/219
3½" 720K/1.44-XT	219/325
5¼" 360/1.2-Laptops	209/239
5¼" + 3½" - Epson Equity	CALL

Compatible Board Products

4 MB Compaq Compatible Mem.	$795
Dual Async - PS/2	89
Serial/Parallel - PS/2	89
SUPER VGA Board	129

DEALS OF THE MONTH

Apple Mac SE/30 40 MB	$2995
Apple Imagewriter II	420
9600 bd. FAX MODEM	245

ALL QUANTITIES ARE LIMITED

IBM Mod 50Z-031	$1850
COMPAQ 286-12 MHz	1150

Prices Subject To Change

Everex - Epson - NEC - Toshiba - Okidata - Zenith

We accept VISA and Master Card

Prices reflect 3% cash discount

Not responsible for typographical errors.

L.A. AREA
8629 Washington Blvd.
Culver City, CA 90232
Hours: M-F 9-5:30
213-559-0338
FAX 213-559-2149

Magna Data
Computer Sales & Service

BAY AREA
3987 Pacific Blvd.
San Mateo, CA 94403

RESOURCES

Calendar Of Events

APRIL

April 30–May 2 X Window Systems: Fundamentals And Applications Development Course. Los Angeles. UCLA Extension. Call: (213)825-3344.

April 30–May 2 SETA: Symposium On Environments And Tools For Ada. Redondo Beach. IEEE Computer Society. Call: Teri Payton, (703)620-7770.

MAY

May 1 ZIM Entity-Relationship Seminar. Los Angeles. Sterling Software. Call: (613)727-1397.

May 1–4 CASE: Computer-Aided Software Engineering, Hands-on Course. Los Angeles. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

May 1–4 OS/2: A Comprehensive Hands-on Introduction Course. San Diego. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

May 16-18

The Camp Show: Computer-aided Graphics, Multimedia And Presentation Products

Los Angeles Convention Center

Explore a showcase of computer-aided graphics, multimedia and presentation equipment and services, and how it all fits together. A special Connectivity Pavilion will demonstrate graphics output using a broad mix of computer platforms. The General Sessions will be on Computer Graphics for Presentations, Financing Multimedia and Interactive Video Systems. Seminar topics will include Animation on the Macintosh and IBM Personal Computers, Interactive Audio, Using MacroMind Director, Making Your Own CD-ROM, and more.

Advanced registration is required. Telephone registration will be accepted until Friday, May 11. Call: 1-800-248-KIPI. Knowledge Industry Publication, Inc., 701 Westchester Avenue, White Plains, NY 10604.

May 2–4 Planning Local Area Networks Class. Los Angeles. Network Career Advancement Institute. Call: (714)838-5458.

May 3 Planning And Implementing A Distributed Systems Environment Seminar. Los Angeles. Information Builders, Inc. Call: (212)736-0842.

May 5 Beginning Lotus 1-2-3 Class. Santa Ana. New Horizons. Call: Rana Muncy, (714)556-1220.

May 5 East-West Computer Show. Pasadena. East-West Computer Shows. Call: (415)388-8893.

May 5 Shop Till Ya Drop Computer Swap. Anaheim. Richard James. Call: 1-800-433-7469.

May 6 East-West Computer Show. Ventura. East-West Computer Shows. Call: (415)388-8893.

May 6 Shop Till Ya Drop Computer Swap. Glendale. Richard James. Call: 1-800-433-7469.

May 7–9 The Three Rs Of Software Automation: Re-Engineering, Repositories, Reuseability Conference. San Francisco. Extended Intelligence, Inc. Call: (312)642-9080.

May 7–9 UNIX Expo West Show. Los Angeles. National Expositions Company. Call: Heidi Dethloff, (312)332-4650.

May 8 Building And Connecting Enterprise Information Systems In The '90s Seminar. Long Beach. Information Builders, Inc. Call: (212)736-0842.

May 8–10 1990 Western Federal Computer Conference. Anaheim. National Council For Education On Information Strategies. Call: (301)984-8586.

May 8–11 CASE: Computer-Aided Software Engineering, Hands-on Course. San Diego. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

May 8–11 Local Area Networks: Implementation & Configuration Course. San Diego. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

May 8–11 Network Cabling And Wiring Techniques Course. Los Angeles. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

May 8–11 SQL: A Hands-on Workshop Course. San Diego. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

May 8–11 UNIX Hands-on Workshop Course. San Diego. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

May 10–12 Technology: An Oasis For Learning Conference. Palm Springs. Computer-using Educators. Call: (415)325-8934.

May 12 Computer Marketplace Show. Costa Mesa. RK Productions. Call: (408)778-5200.

May 15 Building And Connecting Enterprise Information Systems In The '90s Seminar. San Diego. Information Builders, Inc. Call: (212)736-0842.

May 15–18 C Programming Hands-on Workshop. Los Angeles. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

May 15–18 Computer Network Architectures & Protocols Course. Los Angeles. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

May 15–18 Effective Personal Management Skills Course. Los Angeles. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

May 15–18 Finance For Non-Financial Group, Department And Project Managers Course. Los Angeles. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

May 15–18 Object-Oriented Design And

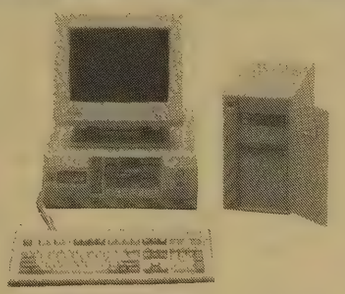
continued

When Price, Quality and Service Count, Call Us

LC 386 SYSTEMS 33 MHz

NOW

- 80386 33 MHz System Clock Speed
- 1 MB Ram on Board
- 64K Fast Cache
- Deluxe AT Case & Power Supply
- 1.2 MB High Density Drive
- 16 Bit 1:1 interleave FDD/HDD Controller
- Parallel & Serial Port
- Mono Hi-Res TTL Monitor
- Mono Graphic Card
- Enhanced AT 101 Key Keyboard



$1959

20 MB System	$2199
30 MB System	2239
40 MB System	2309
65 MB System	2359
80 MB System	2479
100 MB System	2549
200 MB System	2799

LC 386 SYSTEM 25 MHz

- 25 MHz Clock Speed 80386
- 1 MB Ram on Board (80ns)
- Deluxe AT Case
- 200 Watt Power Supply
- 1.2 MB 5.25″ Floppy Disk Drive
- 16 Bit Floppy/Hard Controller
- Parallel/Serial Port
- Monochrome Graphic Card
- Mono TTL Hi Res Monitor
- Enhanced 101 Key Keyboard

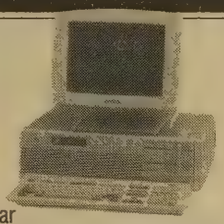
20 MB System	$1529
30 MB System	1569
40 MB System	1609
65 MB System	1659
80 MB System	1779
100 MB System	1849
200 MB System	2099

$1279

25 MHz System w/Cache on Board . . . . . add $450

LC 286 SYSTEM

- 80286 CPU
- 512K RAM on board
- 3 Openings Deluxe Case
- 200 Watt Power Supply
- 1.2 MB 5.25″ FDD
- 16 bit HDD/FDD Controller
- Parallel/Serial/Clock/Calendar
- Mono graphic card
- Mono TTL Hi Res Monitor
- Enhanced 101 Key Keyboard

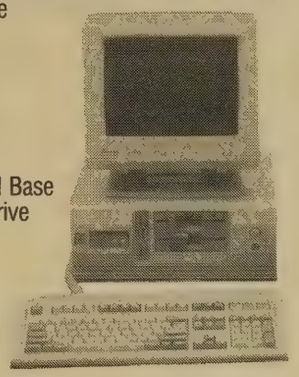


	12 MHz	16 MHz	20 MHz
20 MB Hard Disk	$685	$735	$875
30 MB Hard Disk	$885	$935	$1075
40 MB Hard Disk	$935	$985	$1125
65 MB Hard Disk	$1015	$1065	$1205
	$1115	$1165	$1305

LC 80386SX SYSTEM

- 80386S Motherboard (0 Wait)
- Clock & Calendar Built on Board
- 1024K RAM on Board
- 1.2 MB High Density Floppy Disk Drive
- Deluxe AT Case w/3 Openings
- 200W Power Supply
- LED, Turbo & Reset Button, Keylock
- 101 Key Enhanced Keyboard (click)
- Mono Graphic Card
- Serial/Parallel Port
- Mono TTL High Res Monitor w/Swivel Base
- 16 Bit 1:1 Interleave Floppy & Hard Drive Controller

~~$995~~ **$875**



	REG	SALE
20MB System	~~$1215~~	$1095
30MB System	~~1259~~	1125
40MB System	~~1325~~	1205
65MB System	~~1419~~	1290
80MB System	~~1555~~	1435

LC 88 SYSTEM

- 4.77/10 MHz System Board
- 512K RAM on board
- AT Junior Case
- 150 Watt Power Supply
- One (1) 360K FDD
- Mono graphic card
- Parallel port
- TTL Hi Res Monitor (720x350)
- AT Style Keyboard

$455

1 Drive w/20 MB HD	$705
1 Drive w/30 MB HD	.725
1 Drive w/40 MB HD	.830

OPTIONS—COLOR UPGRADES

RGB	EGA	VGA	Super VGA
add	add	add	add
$175	$315	$375	$455

SPECIALS

Great Savings On Panasonic Printers

KXP 1180 **$179** KXP 1124 **$280** KXP 1624 **$435** KXP 4450 **$Call** for best price

APRIL SALE ITEMS

16 Bit 1:1 4FDD/2HDD Controller MFM/RLL (US made)	$95/115
16 Bit 1024x768 VGA Card	120
Logitech Hi Res Serial Mouse	69
Logitech Hi Res Bus Mouse	79
Citizen Color Printer	Call for best price
Mitsubishi Diamond Scan Monitor (w/NTSC input)	479
Panasonic Multiscanning Monitor (up to 1024x768)	445
NEC IIA VGA Monitor	485
NEC IIID Multisync	595

ORCHID AUTHORIZED DEALER PRESENTING:

PEANUT VGA CARD

16 Bit w/TTL & analog connector
256K RAM on board
800x600 - 16 colors

$129
(Introductory price)

PRODESIGNER VGA
PRODESIGNER VGA PLUS

16 Bit Auto-Bus sense for XT/AT/386
800x600/1024x768

$255/295

4 YEAR MANUFACTURER'S WARRANTY

KYOCERA · Seagate · TEAC · FUJITSU · SONY — FLOPPY DISK DRIVES · ORCHID · MITSUBISHI · LOGITECH

LEGATECH COMPUTERS

789 South San Gabriel Blvd. #D
San Gabriel, CA 91776
Phone: 818-309-2941
FAX: 818-309-2816

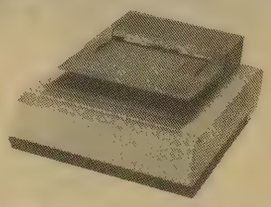
VISA · master charge

Prices subject to change without notice

LODESTAR

14412 East Valley Blvd.
City of Industry, CA 91746
Phone: 818-369-5833
FAX: 818-369-7846

RICOH



RICOH FLAT BED SCANNER
w/(ADF) Document Feeder RS-312
- 64 Gray Level (6 Bit)
- 75 To 300 DPI Resolution
- Interface Board & Cable For IBM (ISI 8)
- 1 Year Manufacturing Support & Warranty
- Desktop Publisher's Graphic Included ($99 VALUE)

RETAIL $1995 — A.J. PRICE $795

RICOH SS30 IMAGE SCANNER
- Full Page Scanner
- High-Speed, Hi-Resolution 300DPI
- Adjustable Reaching Densities: Darken, Normal & Lighten
- Includes Interface Board & Cable For IBM (ISI 8)
- Desktop Publisher's Graphic Included ($99 VALUE)

RETAIL $1495 — A.J. PRICE $395

AST POSTSCRIPT PRINTER NEW

Includes:
True Adobe Postscript, 3 Meg RAM & 35 Fonts Built-In Fonts
Parallel, Serial & Apple Talk Conn, 8 Pages/Minute, 300 DPI

RETAIL $5495 — A.J. PRICE $1995

AST POSTSCRIPT PLUS 3
- HP Series II Emulation
- Diablo Emulation
- 3 Meg RAM & 35 Fonts Built In
- Parallel, Serial & Apple Talk
- 8 Pages/Minute, 300 DPI

RETAIL $6995
A.J. PRICE
$2495

ACCESSORIES

MODEMS:
Zoom 2400 INT 7 Years Warranty $75
Zoom 2400 EXT 7 Years Warranty $85
Zoom 2400 SEND FAX 7 Years Warranty ... $85
DFI 9600 FAX Board w/2400 Modem. $239
Novell NetWorking 2.0. ..... $395
2400 Baud Modem $125

LOGITECH:
Hi-Resolution C9 Serial $65
Hi-Resolution C9 Bus. $75
Trackman $79
Dexxa Mouse By Logitech $29
Logitech Catchword OCR. $139

HAND SCANNER:
HS-3000+ 400DPI $159
ScanMan+ 400DPI $169

MISCELLANEOUS:
CAT Reader OCR. $139
SpinWrite II. $50
Print Cache. $95
AST Ramvantage
w/128K $89
w/512K $99

Wholesale
Distributor
Liquidator

A.J. COMPUTER SUPPLIES
Top Quality & Competitive Prices!
Wholesale Warehouse (714) 895-5802
5122 Bolsa Ave., Suite 107 • Huntington Beach, CA 92649
ALL PRICES SUBJECT TO CHANGE AND ALL PRODUCTS SUBJECT TO AVAILABILITY

RESOURCES

Calendar Of Events *continued*

Programming: A Hands-on Workshop. Los Angeles. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

May 15–18 PC Networking: Hands-on Workshop Course. Los Angeles. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

May 15–18 Real-Time Structured Analysis & Design Course. San Diego. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

May 16–18 The CAMP Show: Computer Aided Graphics, Multimedia And Presentations. Los Angeles. Knowledge Industry Publications, Inc. Call: 1-800-248-5474.

May 19 Computer Marketplace Show. Pomona. RK Productions. Call: 1-800-252-7927.

May 20 East-West Computer Show. San Diego. East-West Computer Shows. Call: (415)388-8893.

May 20–22 Computer & Communications Strategies For Global Competition Conference. Dallas. CIO Magazine. Call: 1-800-343-4935.

May 21–25 The UNIX Kernel: Introduction And Networking Course. Los Angeles. UCLA Extension. Call: (213)825-3344.

May 22–25 Network Planning Support & Management Course. Los Angeles. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

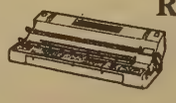
May 22–25 Software Requirements And Design Specifications Course. Los Angeles. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

May 23–26 Collaboration In The Global '90s Conference. San Francisco. Electronic Networking Association. Call: Margaret Chambers, (415)582-5830.

continued

MICROTIMES
CLASSIFIEDS WORK!
1800 N. HIGHLAND, Ste. 506
HOLLYWOOD, CA 90028

LASER CARTRIDGES
NEW CARTRIDGES $88 DELIVERED
RECHARGED $49



- 100% guaranteed
- 20% more toner
- Free pick-up/delivery
- Fast turn-around

NEW DRUM TREATMENT PROCESS
EXTENDS LIFE OF CARTRIDGE BY 500%!

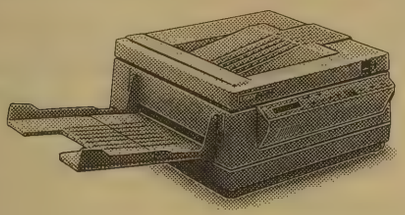
LaserLife
P.O. Box 2555, Redondo Beach, CA 90278
(213) 374-3835
We also buy empties

BEST EPSON PRICES IN SOUTHERN CALIFORNIA

WE'LL MATCH OR BEAT ANY WAREHOUSE PRICES

EPSON LASER & DOT MATRIX PRINTERS

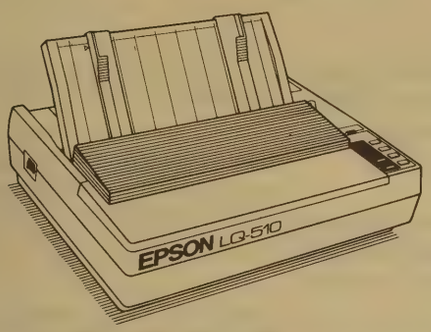
PRINTERS



EPL-6000 LASER

- 300 X 300 DPI resolution
- Fast 6 pages per minute speed
- 6 resident fonts
- Compatible with HPII cartridge & softfonts

CALL



DOT MATRIX

LX 810	**188**
FX 850/FX 1050	**IN STOCK**
LQ 510	**319**
LQ 1010	**429**
LQ 850/LQ 1050	**CALL**
LQ 2550	**BEST PRICE**
DFX 5000	**CALL**

EPSON EQUITY SERIES

COMPUTERS

EPSON® EQUITY™ II+

EPSON EQUITY II+

COMPLETE SYSTEM

- Powerful 80826 dual-speed 8/12 micro-processor
- 640KB RAM memory, expandable to 15.5 MB
- Remarkable compact design
- Enhanced detachable AT
- One year limited warranty
- Monochrome display adapter
- Monochrome monitor
- New LQ 510 Printer
- 20MB Hard Drive

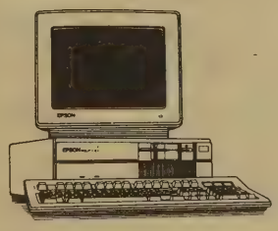
$1689

EQUITY Ie

- Fast 8/10 MHz 8086 microprocessor
- Full 640K RAM internal memory
- Built-in serial, parallel and mouse ports
- Durable 3.5" disks contain up to 720KB of informa tion, twice the capacity of double density 5.25"disks

EQUITY IIe

- 80286
- 5.25" half height drive
- 1MB RAM expandable to 2MB, 3MB, or 5MB
- 101 keyboard
- Parallel, serial, mouse and keyboard ports standard



EQUITY 386SX

- 16MHz 80386SX processor
- Advanced MS DOS 4.01 software included
- MS DOS and MS OS/2 software compatibility
- Standard 1.44MB 3.5" floppy disk drive
- 1MB of standard RAM
- Epson's one year limited

EQUITY 386/20

Personal Computer

- Powerful 386/20 MHz 80386 microprocessor
- OS/2 compatible
- Network compatible
- 1MB RAM is expandable up to 16MB
- 8 available I/O slots
- Epsons one year warranty

$200 Rebate

Epson is a registered trademark of Seiko Epson Corporation

ALL EPSON IN STOCK NOW

PC systems design CORP

PASADENA	BREA	IRVINE
230 S. Lake Avenue	2860 E. Imperial Highway	18009 Sky Park Circle #C
(818) 792-1391	(714) 996-0690	(714) 261-8032

All 3 Stores Open Mon-Fri 10-6pm, Sat 10-5pm

CASH PRICES ONLY. VISA/MC 3% MORE

RESOURCES

Calendar Of Events *continued*

JUNE

June 2–4 The Seventh Annual Show-Biz Expo: Worlds Fair Of Film & Video. Los Angeles. Live Time, Inc. Call: (213)668-1811.

June 4–7 1990 Progress Users Conference. San Diego. Progress Software Corporation. Call: (617)275-4500.

June 5–8 Computer Graphics: Software Techniques & Hardware Components Course. San Diego. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

June 5–8 Hands-on PC Configuration And Troubleshooting Course. San Diego. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

June 5–8 Structured Analysis & Design Methods Course. Los Angeles. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

June 9 Computer Marketplace Show. Pomona. Computer Marketplace. Call: Bob Krushner, (408)778-5200.

June 10 East-West Computer Show. Oxnard. East-West Computer Shows. Call: (415)388-8893.

June 11–13 1990 Nantucket Developers Conference. Palm Desert. Dimensions, Inc. Call: 1-800-247-4481.

June 11–15 8th International Congress Of Cybernetics And Systems Conference. New York. CUNY. Call: Kathy Jaeger, (212)772-5213.

June 11–15 USENIX Technical Conference & Exhibition. Anaheim. USENIX. Call: Spencer W. Thomas, (714)588-8649.

June 15–17 AppleFiesta '90. Tempe, AZ. AzApple/Mac User Group. Call: (602)943-2020.

June 16 Computer Marketplace Show. Long Beach. RK Productions. Call: 1-800-252-7927.

June 26-28

DIGITAL WORLD

Seybold Seminars, Beverly Hilton Hotel, Beverly Hills

The digital revolution will affect many different disciplines, including computing, publishing, entertainment, electronic information delivery, telecommunication and consumer electronics. Increasingly, we will have the tools to make changes to digitized text, images and sound. This opens new realms of possibilities and raises a host of questions about responsibility for information content, protection and ethics. This program will feature conference sessions and informal hands-on demonstrations of products, projects and prototypes. Typical of Seybold Seminars, it will stress an open discussion and exchange of ideas. Registration is open on a first-come/first-serve basis. The complete program includes all seminar sessions and materials, breaks, luncheons and admission to the demonstrations. Seybold Seminars, 6922 Wildlife Road, P.O. Box 578, Malibu, CA 90265, (213)457-5850 Fax: (213)457-4704.

June 19–21 Domain Analysis For Software Reuse In Ada And C++ Course. Los Angeles. UCLA Extension. Call: (213)825-3344.

June 19–21 Eighth Annual PC Expo. New York. H.A. Bruno, Inc. Call: Annie Z. Scully or Mark Haviland. 1-800-444-3976.

June 19–22 Hands-on Datacomm Troubleshooting Course. Los Angeles. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

June 19–22 Image Processing & Machine Vision Course. Los Angeles. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

June 19–22 Object-Oriented Design And Programming: A Hands-on Workshop. San Diego. Integrated

continued

COMPUTER TRADE SHOW • WHOLESALE PRICES • OPEN TO THE PUBLIC

COMPUTER MARKETPLACE

(408) 778-5200 • (800) 252-7927

"The Travelling Mall That Has It All"

HUNDREDS OF SELLERS
Hundreds of dealers and manufacturers having price wars. personal sellers and exhibits. Millions of dollars worth of hardware. software. supplies. books and furniture. Many businesses are liquidating inventories at a fraction of cost.

CONSIGNMENT TABLE
If you have surplus computer equipment and software. bring it to the consignment table at 9 a.m. and we'll sell it for you 10% commission if item is sold. 5% otherwise
Items under $10 value not accepted

SELLING SPACES
$137 TO $330. Call for details.
VISA/M/C accepted.

ADMISSION: $6

Computer MARKETPLACE

10 am to 5 pm

COSTA MESA
ORANGE COUNTY FAIRGROUNDS
SATURDAY • MAY 12, 1990
Take Highway 405 to Fairview Exit. Go South on Fairview to Arlington Dr. Left on Arlington Dr. to Gate 4.

POMONA
LA COUNTY FAIRGROUNDS (FAIRPLEX)
SATURDAY • MAY 19, 1990
SATURDAY • JUNE 9 & 30, 1990
SATURDAY • JULY 28, 1990
From Los Angeles take San Bernadino Freeway (10) East to White, Left on White to Gate 14. From San Diego take I-5 North, South on 10 East (San Bernadino Freeway), Left on White, to Gate 14.

BUENA PARK
SEQUOIA CONFERENCE CENTER
SUNDAY • JUNE 10, 1990
Off the Santa Ana Freeway (5) and Riverside Freeway (91). On Orangethorpe near Beach Blvd.

LONG BEACH
LONG BEACH CONVENTION CENTER
SATURDAY • JUNE 16, 1990
SATURDAY • JULY 21, 1990
From L.A. take Long Beach Freeway (710) South to Linden. Turn left on Linden to the Convention Center.

RESEDA
SHERMAN ENTERTAINMENT CENTER
SUNDAY • JUNE 17, 1990
SUNDAY • JULY 29, 1990
Exit Reseda Blvd. from 101, go to Sherman Way, turn right, go to Canby and turn right, and go to the rear of the building 18430 Sherman Way, Reseda

CD COMPUTERS

COMPUTE-DATA
9042 E. LAS TUNAS DRIVE
TEMPLE CITY, CA 91780
TEL: (818) 309-9277 OPEN 7 DAYS FAX: (818) 309-9768

LOW PRICES

DEALER BARE BONES

XT 88 10MHz $125
10MHz M/B • 150 P/S • JR CASE

AT 286 12MHz $235
12 MHz M/B • 200 P/S • JR CASE

XT 88 10MHz SYSTEM $299
- CD 4.77/10MHz M/B
- 640K RAM Exp. to IMB
- 150 WATT Power Supply
- 360K Drive w/controller
- 101 Enhanced Key Board
- AT JR Case, Key Lock, + LEDs
- Fully Tested - 48 Hr. Burn-in

AT 286 12MHz SYSTEM $499
16MHz Landmark Test
- AT 286 12MHz Zero Wait M/B
- 512 K RAM Exp. to 4MB
- Clock & Calendar
- 200 WATT Power Supply
- 1.2 MB Drive w/controller
- 101 Enhanced Key Board
- AT Case, Key Lock, + LEDs
- AT I/O Serial/Parallel Game Port
- Fully Tested - 48 Hr. Burn-in

AT 286 16MHz SYSTEM $599
20Mhz Landmark - Complete

AT 386 25MHz SYSTEM $1195
- AT 386 25MHz M/B 20 CPU
- 1024K Memory Exp. to 8MB
- Clock & Calendar
- 16 BIT H/F Controller
- 1.2 MB Drive
- 101 Enhanced Key Board
- AT Enhanced Case
- 2 Serial & 1 Parallel
- Fully Tested - 48 Hr. Burn-In

MOTHER BOARDS

XT 88 10MHz M/B	$ 55.00
AT 286 8/12MHz M/B 12 CPU	$155.00
AT 286 16MHz M/B 16 CPU	$239.00
AT 386 20MHz M/B w/20 CPU	$635.00
AT 386SX 16MHz M/B w/16 CPU	$355.00

Monitors

12" Monographic Monitor	$ 75.00
14' Flat Screen Monitor	$ 99.00
14" Color (CGA) Monitor	$199.00
EGA Monitor	$298.00
VGA Monitor Amazing Dot .28	$325.00

ADD ON CARDS

Monographics Printer Card	$25.00
Color Graphics Printer Card	$27.00
Floppy Disk Controller	$12.00
1.44 AT/XT Floppy Disk Cont.	$25.00
Printer Card	$10.00
Multi I/O P/S/G	$27.00
AT I/O P/S/G	$23.00
Serial Card	$12.00
Game Card	$10.00
Clock Card	$13.00
W.D. Gen. H.D. Controller MFM	$48.00
W.A. III H/FD Contr. (Clone)	$78.00
EGA Card 800 × 600	$88.00
VGA Card 8/16 Bit	$99.00/119.00

DISK DRIVES

360K	$58
1.2 MB	$75
1.44 MB	$75
720K	$68

KEY BOARDS

101 o/click	$35
101 click	$38
101 Fujitsu/click	$48
101 Superclick	$42

PWR SUPPLY

150W XT	$30
200W XT	$43
200W AT	$45
200W Full Size	$49

HARD DRIVES

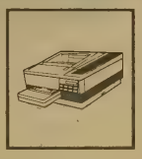
ST 225 20MB	$199
ST 238 30MB	$225
ST 251-1 28MS	$325
ST 80MB	$550

★ DEALERS & CORPORATIONS WELCOME
★ C.O.D., Cash or Cashier's Check

- Prices are subject to change w/out notice
- Defective Returns Must Have RMA No.
- 15% Restocking Charge on Returns
- Shipping Costs Are Buyer's Responsibility

THE BEST SOURCE
FOR HEWLETT PACKARD PRODUCTS™

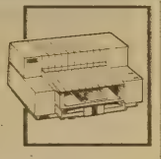
Introducing HP LaserJet III



- Highest print quality in its class
- More fonts and scalable type faces
- LaserJet Series II compatibility protects your software investment
- Resolution Enhancement technology creates breakthrough print quality

In Stock
Come See Demo!

The Hewlett Packard DeskJet PLUS Printer



- 3 Year Warranty
- Laser quality, 300 dpi resolution
- Fast, quiet, easy operation
- Expanded font capability
- Compatible with leading PC's and your favorite software

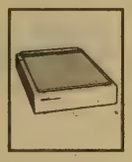
$498
after $150 MFR rebate
$648 before rebate

The Hewlett Packard DeskJet Printer

- Laser quality, 300 dpi resolution
- Fast, quiet, easy operation
- Expanded font capability
- Compatible with leading PC's and your favorite software

$450
after $75 MFR rebate
$525 before rebate

The Hewlett Packard ScanJet Plus Scanner



- 256 greyscale levels (8 bit) for high-resolution images
- Compatible with IBM™PC and Apple Macintosh computers
- OCR capability for easy text entry without retyping

$1490

The New Personal HP LaserJet IIP Printer

- Most affordable HP LaserJet printer
- Publication quality output
- Same wide range of HP LaserJet software and font support
- Backed by HP's reputation for reliability and support

$969

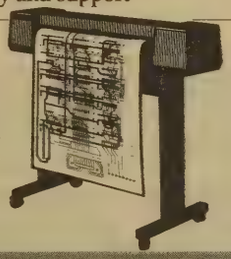
Hewlett Packard LaserJet IID Printer

- High resolution laser output
- Two tray flexibility
- Two sided printing
- Extensive software support
- Optional envelope feeder

In Stock

HP Desktop Plotters

HP 7440A ColorPro
HP 7475A Plotter
HP 7550A Plotter



HP Drafting/ CAD Plotters

HP DraftPro Plotter
HP DraftMaster I Plotter
HP DraftMaster II Plotter

HP VECTRA 286 & 386 COMPUTERS

For those who require uncompromising quality & reliability

HP Vectra ES 286

- 640KB, memory on board
- 1.2MB floppy drive
- Parallel and serial ports
- Enhanced 101 keyboard
- Industry standard compatibility

$1395
Choice of monitors sold separately

Also Available:

HP Vectra ES/12
HP Vectra QS/20 (386)
HP Vectra RS/20C
HP Vectra RS/25C

HP Vectra 486

—"Ready for shipping now!"

Come see us today for the best prices on the system for your needs!

THE PRINTERS ARE FREE

The more HP Vectra's you buy, the more HP printers we'll give you. Absolutely free. And you get to choose the mix of HP printers you want. Here's how it works:

3 Buy 3 HP Vectra 386 PC's, you get a free HP DeskJet PLUS printer.

5 Buy 5 HP Vectra 386 PC's, you get a free HP LaserJet IIP printer.

7 Buy 7 HP Vectra 386 PC's, you get HP's newest laser printer LaserJet III-Free!

Multi-User Unix & Xenix Systems
Call for appointment!

HEWLETT PACKARD
Authorized Dealer

Novell Networking
Expert Installation, Training & Support

PC systems design CORP

PASADENA	BREA	IRVINE
230 S. Lake Avenue	2860 E. Imperial Highway	18009 Sky Park Circle #C
(818) 792-1391	(714) 996-0690	(714) 261-8032

All 3 Stores Open Mon-Fri 10-6pm, Sat 10-5pm
Prices are cash prices NOTE: NO resellers please
CASH PRICES ONLY. VISA/MC 3% MORE

ALL THE RIGHT SOLUTIONS . . .

(FREE Consultation • System Demonstration • Installation • Training • Support)

HOME SYSTEM
Complete Recordkeeping

- 286, 12 MHz
- 20 MB Hard Disk, 1 MB RAM
- Monitor
- Printer, Cable
- DOS
- Quicken Checkbook Software
  - Print Checks, Log Expenses
  - Run Personal Financial Statements
- Installation & Training, Paper & Diskettes

$59 Per Month

BUSINESS SYSTEM
Word Processing

- ALR Powerflex, 12.5 MHz
- 40 MB Hard Disk, 1 MB RAM
- Monitor
- Letter Quality Printer, Cable
- DOS
- Word Perfect 5.01
  - Everything You Need For Quality Office Typing & Correspondence
- Installation & Training, Paper & Diskettes

$99 Per Month

BUSINESS SYSTEM
Accounting

- ALR Powerflex, 12.5 MHz
- 40 MB Hard Disk, 1 MB RAM
- Monitor
- Printer, Cable
- DOS
- Realworld 4 in 1 Accounting or Peachtree Accounting
  - Everything You Need For a Single User Accounting Department
- Installation & Training, Paper & Diskettes

$99 Per Month

VIDEO STORE
Management System

- ALR Powerflex, 12.5 MHz
- 40 MB Hard Disk, 1 MB RAM
- Monitor
- Printer Cable
- Microbiz Video Store Controller Series Software
  - Everything You Need To Totally Automate Operations Of A Video Store, Increase Your Profitability
- Installation & Training, Paper & Diskettes

$99 Per Month

BEAUTY/HAIR SALON
Management System

- ALR Powerflex, 12.5 MHz
- 40 MB Hard Disk, 1 MB RAM
- Monitor
- Printer, Cable
- Microbiz Hair Salon Controller Series Software
  - Daily Operations, Cash Register,
  - Appointment Setting, Payroll Report
- Installation & Training, Paper & Diskettes

$99 Per Month

4 USER SYSTEM
Accounting

- ALR 386 Flexcache, 25 MHz
- 80 MB Hard Disk, 4 MB RAM
- 4 Terminals
- Printer, Cable
- Xenix or Unix Operating System
- Open Systems Accounting
- General Ledger, Accounts Receivable, Accounts Payable, Payroll
- Installation & Training, Paper & Diskettes

$289 Per Month

Are You Thinking About A Network System, Is Your Network Too Slow, Do You Need A Multi-User System . . .

DON'T BUY UNTIL YOU ATTEND OUR FREE SEMINAR!

FREE SEMINAR: Xenix & Unix vs. Novell Networking

- Absolutely No Obligation
- Hands On Demonstration

HARDWARE & SOFTWARE SALE

ALR

- Powerflex, 12.5 MHz, 40 MB, 1 MB RAM . $1195
- Flexcache 386, 25 MHz, 40 MB, 1 MB RAM . . . $2495
- 386, 25 MHz, EISA, 80 MB, 5 MB RAM . . $4495
- 486, 25 MHz, EISA, 80 MB, 5 MB RAM . . $4995
- Flexview VGA Monitor . . . $395

NEC

- 386SX, 16 MHz, 40 MB, 1 MB RAM VGA Monitor . . . $2295
- 286, 10 MHz, 20 MB, 1 MB RAM Monitor . . . $1395

EPSON®

- LX810 . . . $185
- FX850 . . . $345
- FX1050 . . . $455
- LQ510 . . . $325
- LQ850 . . . $525
- LQ1050 . . . $665
- LQ1010 . . . $445
- LQ2550 . . . $935

SCO

- Xenix, 386, System V . . . $475
- Unix, 386, V 3.2 . . . $595
- Professional . . . $595
- Lyrix . . . $425
- SCO Manager . . . $475
- Portfolio Suite . . . $1365

OPEN SYSTEMS

- Accounts Receivable . . . $495
- Accounts Payable . . . $495
- General Ledger . . . $495
- Inventory Management . . . $495
- Payroll . . . $495
- Report Writer . . . $395
- Resource Manager . . . $695

HARD DISKS

- 40 MB, 28MS . . . $325
- 65 MB, 28MS . . . $365
- 80 MB, 28MS . . . $555
- 110 MB, 18MS . . . $665
- 161 MB, 16MS . . . $1095
- 345 MB, 14MS . . . $1735
- 676 MB, 16MS . . . $2295

2102 Business Center Dr.
Suite 130
Irvine, CA 92715

AMS

WE SELL SOLUTIONS

TEL: (714) 253-4624
FAX: (714) 955-0679

MICROFLEX ADDS MORE FLEXIBILITY & POWER TO YOUR MICROCOMPUTERS FOR LESS!

COPY HARD DISKS ON VIDEOTAPES USING VCR

With Alpha Micro's Videotrax board/software videotape backup/copy system. Backup to 150 MB/videotape IID data besides using VCR for watching movies.

PC-XT-AT and compatibles:	PS/2 Models
List: $399	LIST: $499
SALE $299	SALE $399
SAVE $100	SAVE: $100

ADD CD-ROM DRIVE TO PC's

Access 550MB CD-ROM Data besides the ability to play Music-CDs. Choose from Amdek, Hitachi, NEC, Toshiba, and SONY.

List $895 — SALE $795 — YOU SAVE $100

Amdek's Stand Alone, Front Loading CD-ROM Drive

List $995 — SALE $845 — YOU SAVE $150

ADD FAX CAPABILITY TO PC XT, AT

PC QuadFax-96 Half Card. 9600 bps PC Fax for PC/XT/AT. Supports, sends & receives in the background mode. Menu Driven. Group III PC & Standard FAX Machines compatible.

List: $395 — SALE $295 — YOU SAVE $100

COMPUTER IN THE KEYBOARD

Earth's powerful feature packed diskless PC's and AT's—contained in the keyboard. Avoid the clutter of bulky CPU/Disk units; just add monitor and see the advantages. PC—in a keyboard. (Earthstation-I): V40 CPU: 8MHz, CGA, Multiscan CGA & Hercules compatible; Serial and Parallel port; Arcnet, Novell, Netbios and Network/OS supported; Available in standard 256K or 768K.

Earthstation - I:
(PC in a Keyboard) (256K): List: $925 **SALE: $725** **You Save $200**

Earthstation - II:
(AT in a Keyboard) 80286 CPU, 12 MHz, VGA, EGA, CGA, Multiscan CGA & Hercules compatible, Serial & Parallel port, Ethernet, Novell Netbios, Network/OS Supported. Available in standard 512K, 1MB, 2MB & 4MB

Earthstation - IIa:
(AT in a Keyboard) (512K): List: $2075 **SALE: $1625** **You Save $400**

TURBO CHARGE YOUR SLOW PS/2, 50, 50Z, & 60 UP TO SIX TIMES ITS PRESENT SPEED!

It's easy—just add in the MICROMASTER 386 card.
No cables to install or Chips to pull.
Runs 386 Software.

LIST $2,490 w/2MB — SALE $1995 — SAVE $500

ADD FAX CAPABILITY TO MICRO-CHANNEL PS.2

Micro Channel QuadFax-9600. Half Card 9600 bps. PC FAX.

$350 SALE List: $495 — YOU SAVE $145

BREAK THE 640K DOS Barrier

Simply insert Teletek's bandit card into a slot. Designed to use Lotus/Intel/ Microsoft. EMS 4.0 specs. Segmented memory. Available for both XT & AT. Or break the 640K DOS Barrier with SOTA-POP "Piggy Back" chip for AT & PS/2 Models 50/60 & compatibles

List: $449 (for XT)	List: $479 (for AT)	AT/PS2 List: $295
SALE $349	SALE $359	SALE $245
SAVE $100	SAVE $120	SAVE $50

READY TO PLUG IN PORTABLE HARD DISKS 20MB TO 200MB

Just Plug in these Portable Hard Disks with built in Controller Cards & Cables. Works with Desktops and ideal for Laptops.

LIST 20MB:	LIST 40MB:	LIST 100MB:	LIST 200MB:
$899	$1,095	$1,399	$2,299
SALE: $650	SALE: $895	SALE: $1,199	SALE: $1,899
SAVE: $249	SAVE: $200	SAVE: $200	SAVE: $300

ACCELERATE SLOWER PC's & XT's

Accelerate most 8088 & 8086 based PCs including IBM PS/2 Model 30, Compaq Deskpro & Portable, AT&T 6300, Tandy 1200, and Zenith PC's and compatibles.

SOTA 386si-16 MHz (14" Cable incl.)
Based on 80386SX microprocessor. Accelerates an AT by 2.5 times. 19 times faster than a PC.
List: $595 **SALE $399 SAVE $196**

SOTA 286i-12 MHz (14" Cable incl.)
Based on 80286 microprocessor. Accelerates a PC up to 15-times.
List: $395 **SALE $295 SAVE $100**

ADD REWRITEABLE CD TO YOUR PC

Add the 650MB rewriteable CD capability to your PC/AT, PS/2, & MAC.

LIST $5,000 — SALE $4500 — SAVE $500

DOUBLE THE STORAGE CAPACITY OF ANY HARD OR FLOPPY DISK

By using Data Compression with SQUISH PLUS SOFTWARE
The low cost solution to get double the storage.

LIST $99.95 — SALE $89.95 — SAVE $10

ADD 4 OR 8 SERIAL PORTS TO YOUR PC OR PS/2

Digichannel 4 (PC/PS2)
LIST $469 — SALE $369 — SAVE $100

Digichannel 8 (PC/PS2)
LIST $695 — SALE $545 — SAVE $150

INSTANTLY DOUBLE SPEED OF PC/ATs

By simply replacing 80287 math co-processors with FLOATING POINT MATH co-processor of IIT:IIT2C37-20 MHz. Object code & Plug compatible with the 80287 & 80C287A. Operates at clock rate of up to 20 MHz (can use 80286 Clock). Low power CMOS device. Speed booster for desktops and ideal for laptops. Rave reviews by experts: "... co-processor can run as fast as 20 MHz, which means the speed advantage of the 386/387 over 286/287 is about to disappear."—BYTEWK

List: $489 — SALE $389 — YOU SAVE $100

ADD FLEXIBILITY TO I/O OF PC's

MACINTOSH INPUT VIA VOICE

ASI's Voice Navigator allows you to use spoken commands with your MAC Plus, SE or II to execute any function normally performed with your keyboard or mouse but with more flexibility. Ideal for MIDI, CAD/ CAM, Desktop Publishing, Telecommunications & Database browsing & retrieval.

List: $1295 — SALE $995 — YOU SAVE $300

SINGLE PORT ASYNC ADAPTER

Provides PC/XT users with RS-232 serial port. AT&T 6300 compatible.

List: $128 — SALE $100 — YOU SAVE $28

QUADPORT XT 1 SERIAL/1 PARALLEL/ CLOCK CALENDAR

Combines the functions of the chronograph and Async adapter, as well as parallel port into one card.

List: $185 — SALE $145 — YOU SAVE $40

QUADPORT XT 2 SERIAL/1 PARALLEL/ CLOCK CALENDAR

Half slot card for XT's to get two additional serial and a parallel port.

List: $225 — SALE $175 — YOU SAVE $50

QUADPORT AT

Half slot card for AT's for one additional serial and a parallel port.

List: $185 — SALE $155 — YOU SAVE $30

QUADPORT PS/Q FOR IBM's MICROCHANNEL ARCHITECTURE

Adds 2 serial ports to PS/2 computers Models 50, 50Z, 60, 70 & 80.

List: $210 — SALE $180 — YOU SAVE $30

QUADPORT +

Full length card with one parallel and 5 serial ports for IBM PC/XT/AT & Compatibles. Ideal for Multiuser systems, low-end networks connecting several PC's together or for connecting a number of peripherals to one computer.

List: $495 — SALE $395 — YOU SAVE $100

INSTANTLY DOUBLE THE SPEED OF YOUR MAC-SE

Simply add the Doubletime-16 Card.
No Cables to install or chips to pull.
Includes 68000/16MHz.
Supports 68881 Math Coprocessor.

LIST $395 — SALE $295 — SAVE $100

- **FREE Shipping and handling**
- **FREE Overnight Delivery (non-local)**
- **FREE Home or office delivery** (For most items and where possible)
- **FREE Same day delivery (local)**
- **FREE of Surcharge on credit card orders**

MICROFLEX (A division of Multiflex)

Regional Corporate Headquarters:
44 Montgomery Street, Suite 500
San Francisco, CA 94104

Customer service 415-564-1128

Order By FAX: 415-751-0947

Your Best Source for Direct Mail and Mail Order Purchases
Many more useful, unique and hard to find microcomputer products.

Dealer Inquiries Welcome
Telex: 7101114518

Prices and availability subject to change. Not responsible for typographical errors. All the respective Trademarks are acknowledged. Personal & Company checks are welcome, please allow 5-10 working days to clear. Same day shipping for stocks at hand. Prices reflected are cash prices only. Not responsible for compatibility. 30-day moneyback guarantee.

For Orders only
1-800-933-FLEX
Order 24 Hrs./7 Days a Week

Overseas orders, CA orders add 7% sales tax. Corporate and University P.O.'s Welcome. We ship overseas C.O.D. also for your confidence. Overseas orders, Corporate and University orders welcome.

Calendar Of Events *continued*

Computer Systems. Call: John Valenti, 1-800-421-8166.

June 19–22 Real-Time Structured Analysis & Design Course. Los Angeles. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

June 21–23 ACM Tutorial Week '90. Los Angeles. The Association for Computing Machinery. Call: Dave Oppenheim, (818)785-8000.

June 24 Computer Marketplace Show. Buena Vista. Computer Marketplace. Call: Bob Krushner, (408)778-5200.

June 26–28 "Digital World" Seybold Seminar. Beverly Hills. Seybold Seminar. Call: (213)457-5850.

June 26–29 Local Area Networks: Implementation & Configuration Course. Los Angeles. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

June 26–29 Microprocessor Software, Hardware & Interfacing: Hands-on Introduction Course. Los Angeles. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

June 26–29 Project Management: Skills For Success Course. Los Angeles. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

June 30 Computer Marketplace Show. Pomona. Computer Marketplace. Call: Bob Krushner, (408)778-5200.

DISCOUNT COMPUTER SUPPLIES

NO MINIMUM – LIFETIME WARRANTY ON DISKETTES

JVC DS/DD w/Tyvek sleeves & labels ..... 50¢ ea
5.25" DS/DD w/sleeves & labels ..... 25¢ ea
Color DS/DD Disk w/sleeve & label (15 colors available) ..... 45¢ ea
DS/HD 1.2 Meg for 'AT' – w/sleeve & label ..... SPECIAL! ..... 55¢ ea
3 1/2" DS/DD bulk 720K ..... 60¢ ea
3 1/2" DS/HD bulk 1.44 meg ..... 1.25 ea
3 1/2" Label kit – 10 labels in 5 colors ..... 35¢ ea

DBW-5300 5.25" 2 Drawer Disk File w/Lock–Holds 300 ..... 17.00
DBW-3210 3.5" 3 Drawer Disk File w/Lock-holds 210 ..... 17.00
DS–100 L – Holds 100 5 1/4" disks w/lock & key 6.00
TH –80L – Holds 80 3 1/2" disks w/lock & key 7.00
SS - 6 outlet surge suppressor w/noise filter 6.50
CLIP copy holder attaches to monitor 3.75

PRINTER RIBBONS	Black	Color
Citizen MSP 120D, 180D	4.00	5.00
Diablo Hytype II M/S	2.50	3.50
Epson MX/FX 80, 85, 86/Citizen MSP 10	3.00	4.00
Epson MX/FX 100, 286, /LQ 1000, 1050	4.50	5.00
Imagewriter I/II, Prowriter	3.00	3.50
NEC P2200	4.50	N/A
Okidata 82, 92/Gemini 10X, 15X	1.50	2.00
Panasonic KXP 1090, 1180, 1191,1124	3.00	5.00
Star NX 1000	3.00	4.50
Toshiba P1350, P321, P341, P351SX	3.50	4.00
Toshiba P321SL	4.75	5.75
Refurbished Toner Cartridge w/Trade in	50.00	

CALL FOR OTHER RIBBON PRICES & **FREE CATALOG**
MENTION AD FOR THESE SPECIAL PRICES

DATA DEPOT
16691 Gothard St., Suite B
Huntington Beach, CA 92647
(714) 841-9551/800-899-9551

Hours:
M-F 9:30-7 p.m.
Sat. 12-5

Add 2%

Shipping 5% of order **(minimum $2.50)**, & $3.30 for C.O.D.
California residents add 6.25% sales tax

JULY

July 10–13 C Advanced Programming & Data Structures Course. San Diego. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

July 10–13 CASE: Computer-Aided Software Engineering, Hands-on Course. Los Angeles. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

July 10–13 Hands-on Datacomm Troubleshooting Course. Los Angeles. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

July 14 Computer Marketplace Show. San Diego. Computer Marketplace. Call: Bob Krushner, (408)778-5200.

July 14–27 Image Processing & Machine Vision Course. San Diego. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

July 17–20 Distributed Databases: Design, Implementation & Management Course. San Diego. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

July 22 Computer Marketplace Show. Pomona. Computer Marketplace. Call: Bob Krushner, (408)778-5200.

July 24–27 Finance For Non-Financial Group, Department And Project Managers Course. San Diego. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

July 24–27 Hands-on Datacomm And Networks Course. Los Angeles. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

July 24–27 Microprocessor Troubleshooting Course. Los Angeles. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

July 24–27 Network Cabling And Wiring Techniques Course. San Diego. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

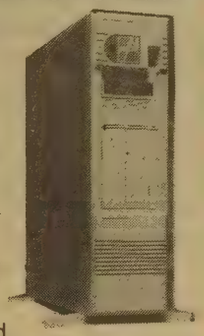
continued

AMERICAN DIGITAL DISCOUNT ASSOCIATION

ADDA PRECISION 386 SYSTEM

Ideal for Network File Server

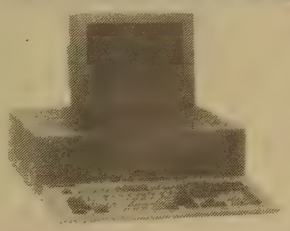
- AT 386 25 MHz
- w/80387 & 80287 Socket
- w/One MB of RAM (Expandable to 2 MB, 4 MB & 8 MB)
- 1.2 MB Floppy Drive
- 40 MB Hard Disk (28ms)
- Monochrome Graphics Card
- Monochrome Monitor
- Enhanced AT Style Keyboard



Model IV-X25 w/20 CPU . $1595
25 MHz w/64K Cache . . . $1995
33 MHz w/64K Cache . . . $2295

ADDA PRECISION SYSTEMS

AT 286
512K (0 Wait State)
(Exp. up to 4MB)
1.2 MB Floppy Drive
AT Hard Disk 1 Floppy Drive Controller
Mono, Graphic Card
w/Printer Port



Monochrome Monitor
Enhanced 101 Keyboard
Full One Year Warranty (Parts & Labor)
Additional items may be added by adding and subtracting the prices provided

Precision
NEW RELEASE!
FCC Class B
286-16 MHz
Barebone Package
Case, Power & Motherboard
$325

Precision
Model III-386SX16
386SX-16 MHz
System . . . . . **$845 Special**
w/20MB Hard Disk **$1045**
w/40MB Hard Disk **$1145**

Precision
Model III-X16
16 MHz System **$695 Special**
w/20MB Hard Disk **$895**
w/40MB 28ms **$995**
Model III-X12 . . . . . **$645**

NOVELL NETWORK SYSTEMS

NOVELL

- Novell Network Integration System ELS I, ELS II, Advanced Netware
- On-Site Installation & Service
- On-Site Maintenance Contracts

VAR's and Consultants Welcome!
Please call us for details

NETWORK

Novell Networking Specialist
Call for Quote
Arcnet Card (8 BIT) . **$79**
Ethernet Card (8 BIT) **$149**
Arcnet Active Hub . **$195**
Arcnet Passive Hub . **$19**

NETWORK COMPONENTS

Arcnet Card (16 bit) . **$149**
Ethernet Card (16 bit) **$189**
50 OHM Terminator. . . . **$5**
93 OHM Terminator. . . . **$5**

VGA/EGA DISPLAY

TATUNG cm-1495
Multi-Syn. Monitor
13" Screen, 800x560 **$495**

TATUNG VGA Monitor
14" Screen **$365**

TATUNG VGA Mono Monitor
14" or 12" Screen. . . . . **$CALL**

VGA PACKAGES

VGA-16 Plus
VGA (Paradise Chip Set)
16 Bit w/256K, Special **$125**

VGA Bundle
14" VGA Monitor 0.28 Dot
w/VGA-16 Plus Card **$449**

MVGA-1024
VGA (Paradise Chip Set)
1024 x 768 w/256K **$139**

VGA WONDER
ATI Fast 1024x768 w/256K . . **$189**

ULTRA VGA BUNDLE #1
14" VGA Monitor 0.28 Dot Pitch
w/VGA WONDER CARD
Special. **$575**

ULTRA VGA BUNDLE #2
14" VGA Monitor 0.28 Dot
Pitch w/MVGA-1024 Card . . . **$525**

Tape Backups

COLORADO SYSTEMS 40-120 MB TAPE BACK-UP
Self Contained & Menu Drive & File by File backup • PC/XTAT & PS2 Compatible
Special **$255**

Colorado Systems External Kit. . . . $119

PC XT/AT KEYBOARD

104 Key Tracball Keyboard Introductory Special
$** **$
(Microsoft Mouse Compatible)

Enhanced AT Keyboard $49

MOUSE SYSTEM

Genius Mouse
250 DPI, 3 Buttons, Serial or Bus Mouse Special Sale **$39**
w/Turbo Cad Software . . . **$15**

GM-6X Serial Mouse, 3 button (50 to 800 DPI) . **$39**

Logitech HiRez Mouse . . . **$79**

MODEMS

ADDA 2400 Baud Internal

Support Com 1 - Com 4
Made in USA Internal **$89**
External . . . **$99**
Bullet 2400 Baud Internal, MNP Class 5 . . . . . **$185**

HARD DRIVE for PC/AT

20 Mb w/XT Controller. **$259**
40 Mb ST 251-1 (28mS) **$325**
70 Mb By Micropolis (28mS) . . **$595**
120 Mb by Maxtor (25mS) . . . **CALL**

CONNER IDE DRIVES

CP3044 42.6MB (25ms)
CP3104 104.9MB (25ms)
CP3184 80MB (25ms)
CP3204F 2/2MB (16ms)

Call

POWER SUPPLY

150 Watt Power Supply
For PC/XT **$49**

200 Watt Power Supply
For PC/AT **$69**

SYSTEM SOFTWARE

MS DOS 3.3
MS DOS 4.01
w/GW BASIC
(slim version)
$ Call

TTL MONO MONITOR

TTL MONOCHROME MONITOR
Samsung Flat Screen Monitor
14" Screen, Flat Screen **$115**

ADDA TTL MONITOR $79
12", hi-res

ADD-ON CARDS

Mono Graphic/Printer Port **$29**
IDE Controller w/2 Ser/1 Par **$69**
AT FD&HD Controller By NCL . . . **$79**
DTC AT FD/HD Controller, 1:1 MFM **$99**
DTC 7280 1:1 (MFM) **$89**
DTC 7287 1:1 (RLL) **$119**
AT Mini-I/O Card **$49**
Serial Card **$20**
Printer Card **$15**

ACCESSORIES

8087 Chip	$ Call
80287 Chip	$ Call
Serial Cable	$15.00
Printer Cable	$12.00
4-Way Data-Switch Box	$49.00
Power Directory	$39.00

Prompt delivery, usually shipment within 48 hours (except personal check orders) We welcome major educational institutions and government agencies to establish open accounts (P/O) status with us to facilitate shipment of orders. Write or call for details.

Prices quoted above do not include UPS shipment charges.
Prices subject to change without notice.
California residents add 6.75% sales tax.

Mon-Fri 8:30-5:30

IBM PC is a registered trade mark of IBM Corp.
TAXAN is a registered trade mark of TAXAN Corp.
American Digital Discount Association

AMERICAN DIGITAL DISCOUNT ASSOCIATION, INC.
4040 Spencer St., #M
Torrance, CA 90503
(213) 542-3578

"Always The Lowest Price"

FUTURE COMPUTER

FCR 386/20MHZ
- 1MB RAM
- 1.2MB DRIVE
- 101 KEYBOARD
- MONITOR & MGP

$1045

FCR 286/12MHZ
- 512K RAM
- 1.2MB DRIVE
- 101 KEYBOARD
- MONITOR & MGP

$525

FCR 386SX/16MHZ
- 1MB RAM
- 1.2MB DRIVE
- 101 KEYBOARD
- MONITOR & MGP

$745

FCR XT/10MHZ
- 256K RAM
- 360K DRIVE
- 101 KEYBOARD
- MONITOR & MGP

$335

EPSON
LX-810
• Full-featured 9-pin, 80-column dot-matrix printer
• Fast 200 CPS Superdraft print speed
• SmartPark™ paper handling
• SelecType front control paner
• Built-in Near Letter Quality fonts
• Epson's one year limited warranty
$178

EPSON
LQ-510
• 24-Pin Letter Quality printer
• Prints 180 CPS in draft mode, 60 CPS in Letter Quality mode
• Easy-to-use SelecType front control panel
• Advanced SmartPark™ paper handling
• Built-in Epson Roman and Sans Serif Letter Quality fonts
• Epson's one year limited warranty
$319

EPSON PRINTER SPECS

EPSON	Width	Speed	Price
LX-810	STD.	180/30 NLQ	$178
LQ-510	STD.	180/60 LQ	$319
FX-850	STD.	264/54 NLQ	CALL
FX-1050	WIDE	264/54 NLQ	CALL
LQ-850	STD.	264/88 LQ	CALL
LQ-950	MEDIUM	264/88 LQ	CALL
LQ-1050	WIDE	264/88 LQ	CALL
LQ-2550	WIDE	400/133 LQ	CALL
DFX- 5000	Soon Will Be Available		
EPL- 6000	Future Computer Research, CA		

Prices subject to change without notice

15622 S. CRENSHAW BLVD. • GARDENA, CA
(Between Manhattan Beach Blvd. & Compton Blvd.)

(213) 323-9322

RESOURCES

Calendar Of Events *continued*

July 24–27 Object-Oriented Design And Programming: A Hands-on Workshop. Los Angeles. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

July 24–27 Software Requirements And Design Specifications Course. Los Angeles. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

July 31–August 3 OS/2: A Comprehensive Hands-on Introduction Course. Los Angeles. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

AUGUST

August 5 The Burbank Computer Show & Sale. Burbank. East-West Computer Shows. Call: (415)388-8893.

August 7–10 Hands-on Datacomm And Networks Course. San Diego. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

August 7–10 Project Management: Skills For Success Course. San Diego. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

August 14–17 C Advanced Programming & Data Structures Course. Los Angeles. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

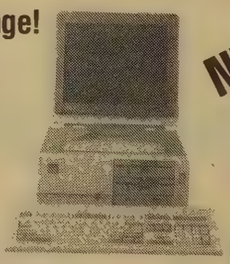
August 14–17 Computer Graphics: Software Techniques & Hardware Components Course. Los Angeles. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

August 14–17 Computer Network Architectures & Protocols Course. Los Angeles. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

WE OFFER TOP PERFORMANCE

Special Discount For Dealer Package!

POWER



Bare Bone

- 286-12 MHz $649
- 386-16 SX. $799
- 386-25 MHz $1259
- 386-25 MHz w/32 Cache . . . . SALE-$1449
- 386-25 MHz w/64K Cache. $1599
- 386-33 MHz w/Cache . . $2250

All Bare Bone Systems Include:
- 1 MB Memory
- AT Case w/230 Watt Power Supply
- Dual Hard/Floppy Controller
- Serial, Parallel & Game Port
- 1.2 MB or 1.44 MB Floppy Drive
- 101 Enhanced Keyboard
- 1 Year Parts & Labor Warranty

NOT JUST ANOTHER LAPTOP

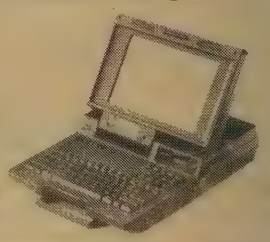
NEW!!

Super Sale NOW!

LP-286 ONLY

$1999 20MB

$2199 40MB



LP-286 SPECIFICATIONS
- 80286 CPU; running at 12 MHz
- Socket provided for 80287 coprocessor
- Real time clock/calendar
- 640KB DRAM 1 MB/2 MB/4 MB Factory Option
- Yellow green LCD panel; yellow backlit switchable
- Custom designed 720x400 dots, 80 characters x 25 lines
- CGA (640x400) and HGC (720x350) switchable
- One 3½" 1.44 MB floppy disk drive
- Built-in 40 MB hard disk (power off auto park)
- Built-in 20 MB hard disk
- 77-key keyboard
- Embedded function keys
- Numeric key pad
- Parallel printer port
- Two RS-232C serial ports
- RGB/Hercules video external port
- External 16 bit bus
- 15.94"D x 12.6"W x 3"H
- Weight: 13 lbs.
- 40 Watt
- AC 90-260V autoswitchable
- 12V DC auto/boat lighter adapter (option)
- Rechargeable 12V battery pack (option)

Performance Times: (Times Given in Seconds)

286-Based Computers	NOP	Instruction Mix	Floating Point Calculation	Convention Memory
CGS Laptop	2.78*	5.92*	11.32*	0.84*
Sharp-7221	3.50	7.36	29.20	1.06
Toshiba T3200	2.80	5.93	23.51	0.86
Zenith 286 Supersport	2.78	5.94	22.19	0.93

*Indicates best Performance Times

BEST PRICE! HIGH QUALITY! FULL SERVICE! YOU'LL GET THE RIGHT CHOICE!

CGS UNI Computer
17517 Fabrica Way, Suite E, Cerritos, CA 90701

CALL TODAY ➡ (714) 521-0867
Fax: (714) 521-0854

14 Yrs. In Orange County

"USER FRIENDLY DEALER"

Concord Computer Products

*Division of Concord Electronics

APPLE
IBM
LEADING EDGE
REPAIR FACILITY

714-632-6790 • 800-435-0907

Quality Without Cutting Corners

286 EGA MINI TOWER SYSTEM

- 12 MHz
- 640K Floppy
- 1.2 Floppy
- Power Supply
- EGA Card, Paradise
- 1 Year Warranty
- Keyboard
- 20 MB ST 225 - WA2 - CONT. CARD
- EGA Color Monitor
- Mini Tower Case
- I/O Card

$1250 w/640K

★ **FREE SURGE UNIT AND BOOK WITH PURCHASE**

SPECIAL SALE ITEMS

Seagate 20 MB Hard Drive . $189
Logitech Mouse 62
Video 7, VGA 1024i Card . . . 245
2400 Baud Modem 95
Mitsubishi MP 286 Laptop w/20MB H/D 1825

80386 20 MHz SYSTEM

- Micronics Board
- Intel 80386 Microprocessor
- 3 Speed Selectable 6/8/20 MHz
- 1 MB on Board (80 ms)
- 1.2 Floppy Drive, Teac
- Keyboard
- Western Digital 1006 1:1
- 40 MB Hard Drive 28 MS
- Expandable to 8 MB
- Socket for 80387
- Monographics Card with Printer Port
- 1 Year Warranty
- 14" TTL Monitor Flat Screen

$1845

★ **FREE SURGE UNIT AND BOOK WITH PURCHASE**

Low Cost AT Turbo 6/12/15MHz

- 640K RAM
- 6/12 MHz
- Battery/clock/calendar
- 1.2 Floppy, Teac
- 20 MB Seagate Drive
- Western Digital Controller
- 200 W Power Supply
- Herc. compatible graphics card
- Hi-res. TTL Monitor
- Parallel/printer port
- Keyboard
- Cabinet
- Free Training
- 1 Year Warranty
- **Small Footprint Digital Case**

$970

★ **FREE SURGE UNIT AND BOOK WITH PURCHASE**

AT 16/20 MHz SYSTEM

- 1 MB RAM
- 16/20 MHz
- Battery/clock/calendar
- 1.2 Floppy, Teac
- 40 MB Seagate Drive
- Western Digital Controller
- 200 W Power Supply
- Herc. compatible graphics card
- Hi-res. TTL Monitor
- Parallel/printer port
- Keyboard
- Cabinet
- Free Training
- 1 Year Warranty

$1250

★ **FREE SURGE UNIT AND BOOK WITH PURCHASE**

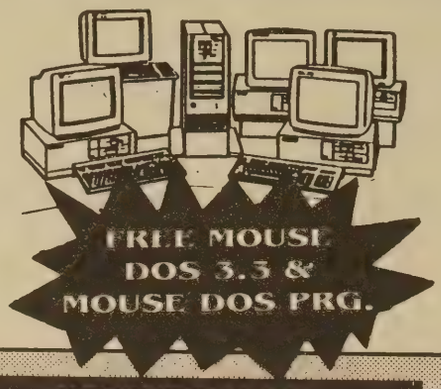
2910-B E. La Palma Ave.
Anaheim, CA 92806

Terms: Mastercard, Visa, C.O.D. Prices subject to change without notice.

COME IN OUR STORE!
OVER 500 PRODUCT ITEMS IN STOCK!

An American Owned and Operated Corporation.

PC XT/AT COMPATIBLES LOWEST PRICES LEADER



KATRONICS TECHNOLOGY

Excellence in Quality - Services - Supports

14382 HOOVER ST., SUITE A9 • WESTMINSTER CA 92683

(714) 895-2084 **(714) 897-3234**

FAX: (714) 897-9853

- ATTRACTIVE DISCOUNT FOR DEALER and QUANTITY BUYERS
- SPECIALS and DISCOUNTS FOR STUDENTS and PROFESSORS ID REQUIRES

XT TURBO 88

- DELUXE CASE 2 BUTTONS, 3LED'S
- 150W POWER SUPPLY
- XT MOTHERBOARD 4.77/10 MHz W/0KB RAM ON BOARD
- MULTI I/O (Ser., Par., Game PORTS CLOCK, BAT
- 1.2KB DRIVE + 360KB DRIVE
- DISPLAY ADAPTOR
- MONITOR
- 101 KEYS KEYBOARD
- FULLY ASSEMBLED AND TESTED

	MONO SYSTEM	COLOR SYSTEM	EGA SYSTEM
	$449.00	**$595.00**	**$785.00**
20MB (68MS)	$715.00	$855.00	$1050.00
30MB (68MS)	$740.00	$885.00	$1080.00

AT 386 SYSTEM

- DELUX CASE, 1 BUTTON, 3 LED'S
- 230 WATTS POWER SUPPLY
- MOTHERBOARD CPU 386-20 eKB RAM ON BOARD EXP. UP TO 8MB
- COMBINATION FDD/HDD CONTROLLER
- 1.2 FLOPPY DRIVE + AT I/O (2 SER - 1 PAR)
- ENHANCED 101 KEYS KB (USA)
- 60 MB HARD DISK (22ms)
- DISPLAY ADAPTOR
- MONITOR

MONO	EGA	VGA	SI
$1599.00	CALL	$1999.00	25

- MINI TOWER ADD $ 15
- FULL SIZE TOWER ADD $ 85
- CPU 386 - 25 CALL

NET WORK

- ADVANCED NETWARE 286 ELS .....> CALL
- LANTASTIC .....> CALL
- LANSMART HARDWARE .....> CALL
- ETHERNET LAN HARDWARE .....> CALL
- ARCNET HARDWARE .....> CALL
- ARC NET 8 PORT ACTIVE HUB.....> L. PRICE
- ARCNET 4 PORT PASSIVE HUB .....> CALL

EVEREX 286/386

MODEL 1800C	CASE+200WPS+CPU-12+1MB RAM FDD/HDD CONTROLLER-SER&PAR PORTS 1.2 MB DRIVE-40MB HARDDISK 101 KEYS KB-DISPLAY ADAPTOR-MONITOR	
	MONO	VGA
	$1510.00	**$1895.00**
MODEL 2801A	CASE+200 WPS+386-20+1MB+64KCACHE FDD/HDD CONTROLLER-SER&PAR PORTS 1.2 DR-40MB HARDDISK-101 KEYS KB DISPLAY ADAPTOR-MONITOR	
	MONO	VGA
	$2995.00	**$3380.00**

PORT 286

- PORTABLE CASE + 195W PS KEYBOARD + AMBER 9" MONITOR.
- MB 286-12 W/eKB RAM + FDD/HDD CONTROLLER, 1.2 DR + AT I/O & MONO GRAPHIC CARD.

RABIT 286

- GAS PLASMA PORTABLE
- GAS PLASMA DISPLAY + 200 WPS + 101 KEY KB
- MB 286-12 W/0K RAM + FDD/HDD CONTROLLER + 1.2 KB DRIVE + 1 PAR + 1 SER + CARRYING CASE

AUTO CAD SYSTEM

- MICRONICS AT 386 / 25 / 33MHZ
- 32 K CACHE EXP. TO 64KB
- DELUX TOWER CASE
- 230 W. POWER SUPPLY
- 2MB RAM EXP. TO 8MB
- COMBO FDD / HDD CONTROLLER 1:1
- 1.2 DRIVE
- 80MB HARD DISK (22MS)
- 2 SER, 1 PAR, 1 GAME PORTS
- 101 KEYS KEYBOARD W/ CALCULATOR
- 32K CACHE EXP. TO 64KB
- VGA HI-RES 1024 X 765
- VGA MONITOR
- SUMMAGRAPHIC 12" X 12" DIGITIZER
- CO-PROCESSOR 38 7/25/33

LOW PRICES ..... PLEASE CALL

AT 286 SYSTEM

- DELUX CASE, 2 BUTTON, 3 LED'S
- 200 WATTS POWER SUPPLY
- MOTHERBOARD CPU 80286 W/eKB RAM EXT. TO 4MB
- COMBINATION FDD/HDD CONTROLLER
- 1.2 FLOPPY DRIVE
- ENHANCED 101 KEYS KEY BOARD
- DISPLAY ADAPTOR AND MONITOR
- 60 MB HARD DISK (22 ms)
- 2 SER - 1 PAR - 1 GAME PORTS

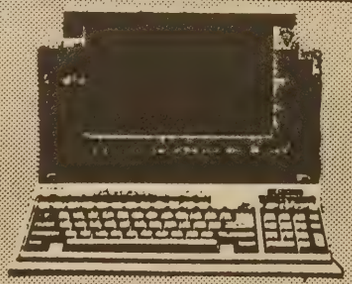
	MONO	EGA	VGA*
286 - 12	$1080.00	CALL	$1460.00
386 - SX	$1220.00	CALL	$1610.00

* VGA HI-RES 800 X 600

TAPE/SCANER

- TAPE/HARDISK. FOR MACINTOSH .....> CALL
- TAPE 20/40/60 MB EVEREX .....> CALL
- PS2 TAPE DRIVE 60/125 MB .....> CALL

WE DO NETWORKING



INTERFACE CARD

COLOR GRAPHIC CARD	$39.00
MONO GRAPHIC CARD	$35.00
EGA CARD	CALL
VGA CARD	CALL
MULTI I/O	$42.00
PRINTER CARD	$16.00
SERIAL CARD	$17.00
GAME CARD	$16.00
AT I/O	$35.00
COMBO FDD/HDD WA2	$80.00
HARDISK WD-WX1	$55.00
HARDISK WD-RLL	$60.00

HARD DISK

20 MB KYOCERA W/O CONTR	$199.00
30 MB KYOCERA W/O CONTR	$215.00
40 MB MISUBISHI W/O CONTR	$395.00
80 MB ST4096 W/O CONTR	L. PRICE
MAXTOR HARDISK ALL MODELS	CALL
MINISCRIBE ALL MODELS	CALL

MONITOR

RGB MORNITOR	L. PRICE
EGA MORNITOR	CALL
NEC MONITOR	CALL

MODEM

EVEREX 1200/2400	L.PRICE
FALCON 1200/2400	55/95
FALCON EXTERNAL	CALL

TOWER SYSTEM available

MEMORY CHIPS

.....> CALL

PRINTER

PANASONIC	ALL MODEL	> ON SALE
EPSON	ALL MODEL	> L.PRICE
CITIZEN	ALL MODEL	> CALL

* *ALL SYSTEMS ONE YEAR WARRANTY PARTS & LABOR*

* *FINANCING AVAILABLE*

* *PRICES AND SPECIFICATIONS SUBJECT TO CHANGE W/O NOTIC*

* * *IF ORDER WITH AT SYSTEM*

EPSON®

EQUITY II+
- 1.2 MEG Floppy
- 40 Meg Hard Disk
- 640K Ram
- Serial/Parallel/C/C
- 12 MHz
- Monochrome Monitor
- Graphic Card
- MS DOS
- GW Basic

Call

EQUITY I+
- 360K Floppy
- 20 Meg Hard Disk
- 640K Ram
- Serial/Parallel Port
- Monochrome Card
- Monochrome Monitor
- MS DOS
- GW Basic

$1195

LOW PRICE LEADER
Since 1983

EVEREX
COMPUTER SYSTEMS DIVISION

Everex
Step 286-12 MHz, 16 MHz & 20 MHz
- 1 Meg RAM
- Set up utility in ROM
- S/P, C/C
- Enhanced keyboard
- 1.2 MB Floppy
- DOS/Basic

Call for your configuration

Everex
Step 386-16 MHz, 20 MHz & 25 MHz
- 256K cache of very high speed RAM
- 2 Meg RAM, expandable to 16 Meg
- S/P, C/C
- Enhanced keyboard
- 1.2 MB Floppy
- DOS/Basic

Call

COMPAQ

386 S 40 Meg	Call
386 20E, 40 Meg	4385
286E 40 Meg	Call
386 110 Meg/25 MHz	7395
386 60 Meg/25 MHz	4095
386-84 Meg/33 MHz	Call

CARD & MONITOR EXTRA
Call for other models

LAP-TOP

Compaq SLT 286-20	3699
SLT 286-40	3999
Toshiba T1000	629
T1000SE/1000XE	Call
T1200HB/1200XE	Call
T3200-40 Meg	Call
T5100	Call
T5200	Call

TOSHIBA SALE CALL FOR ALL!

Macintosh

Mac SE/20 meg	2795
Mac II/40 meg	3950
Mac SE 2 drive	2295
Call for 60 and 100 meg Laser NT	3595
Laser NTX	CALL

PACIFIC DATA

Pacific Page	$449
1-2 Meg Board IIP/III	180
1-2-4 Meg Laser II	175
25-In-One Cartridge II/III	245/345

AST
386SX BRAVO
2 Meg RAM
40 Meg Hard Disk
VGA Monitor
VGA Card
DOS 3.3

$2295

Call for other models

WE STOCK

BROTHER, CITIZEN, OKIDATA, EVEREX, GOLD STAR, FAX, TOSHIBA, NEC, WYSE, HITACHI, INTEL, PRINCETON GRAPHICS, SONY, ACER, HOUSTON INSTRUMENTS, AMDEK, HAYES, SAMSUNG, CALCOMP, PC MOUSE, MICROSOFT MICE, LOGITECH, MITSUBISHI, IRWIN & ARCHIVE, TAPE BACK, TAXAN, MAGNAVOX

SOFTWARE SPECIALS

dBase IV	455
WordPerfect 5.1	259
Aldus PageMaker	470
Ventura Publisher	525
Clipper 5.0	560
Wordstar 5.5	150

BOARDS

Paradise VGA	219
Vega VGA	249
AT Wonder	265
VGA Card	125

FAX MACHINES

Sharp FO 220	725
Sharp UX 350	1249
Canon	Call
Minolta	Call
Brother	Call
Ricoh	Call
Murata	Call

MONITORS

Nec Multisync IIA	$499
Nec Multisync 3D	595
Nec Multisync 5D	2400
Samsung EGA	359
Goldstar VGA	375

NOVELL

INTEL COPROCESSORS

8087-3	105
8087-2	145
80287-8	220
80287-10	260
80387-16	335
80387-20	399
80387-25	499
80387-33	599

PRINTERS

Epson

LX-810/LQ-510	195/345
LQ-850/1050	490/680

Okidata

320/321	335/460
390/391	460/635

Toshiba

321-SL/341-SL	399/595
311	360

DISKETTES

Sony 3.5 DS/DD	$15
Sony 3.5 HD	26

LASER PRINTERS

HP Laser II	1595
HP LaserJet III	1695
Panasonic 4450	1425
Brother HL-8	1949
NEC LC 890	3195
PageLaser 6	1095
Canon Laser	Call

MODEMS

Everex 1200 Int	89
Everex 2400 Int	159
Hayes 1200B	289
More in Stock	Call

We Accept LC, Cashier Checks, Money Orders, Visa, MC, AmEx.
Above prices reflect cash discounts only.
3% charge on Visa, MC & 5% on Am Exp

COMPUTERLANE

818-884-8644 (In CA)
1-800-526-3482 (Outside CA)
818-884-8253 (FAX)
22107 Roscoe Blvd.
(½ block west of Topanga)
Canoga Park, CA 91304
Hours: M-S 9-6

NOVELL SPECIALS

ELS I	$510
ELS II	1050
ADVANCE 286 V 2.15	1899
ADVANCE SFT V 2.15	2999

Compaq is a registered trademark of Compaq. IBM is a registered trademark of International Business Machines. Prices subject to change without notice.

User Group Network

BULLETIN BOARDS

213

Best Friend BBS. (213)868-9398 or (714)521-0308. 8-N-1, 24 hrs., 300/1200/2400. Multi-line, multi-user, CB-Chat, public & private, on-line travel tips, over 2000 personal ads, limited free access lever. Social board. [Exp. #70]

Beta BBS. (213)393-7227. BBS for DJ's, audio/videophiles, entertainment/DJ news and files. Sysop: Jason Lin. [Exp. #70]

Drug Abuse Information (DIAMP). (213)825-9057. 8-N-1, 24 hrs., 300/1200/2400. Drug information, statistics, bibliographies, forums, e-mail, downloads, and uploads. Free membership, reg. requested. Sysop: Greg Cason. [Exp. #70]

LAAUGLine. (213)858-8023. 24 hrs., 300/1200/2400. Sysop: Dick Freytag. [Exp. #70]

LAMG (Los Angeles Macintosh Group). (213)559-MACS. 8-N-1, 24 hrs., 300/1200/2400/9600. 100 megs online of Mac Rumors, news reviews, unclassified ads, discussions, observations, testimonials, and public domain software. Sysop: Reed Hutchinson. [Exp. #70]

Lunatic Laboratories Unlimited. (213)655-0691. 1200/2400. Cyberpunk, occult, mind-expansion, and suppressed technology information. Sysop: The Mad Alchemist. Voice: (231)658-7473. [Exp. #70]

Midnight Express. (213)878-6700. 8-N-1, 24 hrs., 300/1200/2400. Free access, unlimited e-mail, graffiti, games, discussions. Sysop: Justin Case. [Exp. #70]

Miracle Programmer's Oasis. (213)871-2913. 8-N-1, 24 hrs., 300/1200/2400. Structured to teach all programming languages. Sysop: Louis. [Exp. #70]

Planet Zed. (213)434-2933. 8-N-1, 24 hrs. 1200–19200. Latest IBM shareware first! Sysop: Mike Zed. [Exp. #70]

SBLC BBS. (213)422-2793. 24 hrs., 300/1200/2400. Multi-user, 31 subboards, large x-fet sections, adult section. Sysop: Lisa Townsend. [Exp. #71.]

South Bay Commodore Users Group (SBCUG). (213)545-8653. 24 hrs., 300/1200/2400. X-modem. Sysop: Eric Hvinden, Voice: (714)858-2868. [Exp. #71.]

The Backroom BBS. (213)420-7622. 24 hrs., 300/1200/2400/9600/14000/19200. Support for IBM, Mac, and Apple II; 3000 PD files, WWIV software; WWIVnet; plus on-line games, ComputerLand retail price list with discounts for BBS users. Sysop: Byte Knight. [Exp. #70]

The Downey RCP/M. (213)806-2226. 8-N-1, 24 hrs., 300/1200/2400. One of the last RCP/M's Sysop: Mark Motley. [Exp. #70]

The Original Off-Off Broadway Bulletin Board System. (213)453-7038. 8-N-1, 24 hrs., 300/1200. Text files and messages only, non-subscriber. Sysop: James Gossage. [Exp. #71.]

WHY NOT RBBS. (213)436-1311. 24 hrs., 300/1200/2400. Shareware and PD for IBM's and compatibles, msg. base and conferences. Free access. Sysop: David A. Scott. [Exp. #70]

303

The Sunstroke BBS. (303)361-6106. 8-N-1, 24 hrs., 2400. A bulletin board service for the entertainment industry, offering e-mail, musicians referral, much more. Sysop: Louis Moritzky. [Exp. #71.]

619

DataByte Computer Services. (619)367-9208. 24 hrs., Wildcat, Tomcat, UST-HST, Free, DPT Graphics. Sysop: Jim Kornegay. [Exp. #70]

714

Best Friends BBS. (714)964-0083. 24 hrs., 300/1200/2400. Multi-line, multi-user, chat-mode, public boards, on-line travel tips, discounts, special events, pool parties & MORE. A dating/matchmaking/friendship board. [Exp. #71.]

Cash Cow BBS (N. Orange County Computer Club). (714)962-1857. 24 hrs., 2400. RBBS, 4th year of operation, specialize in business, lotus, applications. Sysop: Vance L. Jochim. [Exp. #70]

Comland PcBoard BBS. (714)532-1644. 24 hrs., 1200/2400/9600. Echo-mail, online games, 200Mb DESQview support. Sysop: Don Carroll. [Exp. #71.]

Comm-Link. (714)987-5412. 24 hrs., 300/1200/2400 Multi-line. multi-user games, chat, SIGs, on-line shopping mall, news, shareware & e-mail. Sysop: Eddie Disney. [Exp. #70]

French Connection BBS. (714)858-3444. 300/1200/2400/9600. 24 multi-line dating service and community service with 50.4Gb of software. [Exp. #71.]

Matchmaker Los Angeles. (714)892-3047. 8-N-1, 24 hrs., 300/1200. Sysop: The Matchmaker. [Exp. #70]

National Internal Audit BBS (NIABBS). (714)962-1827. 24 hrs., 2400. Forum for professional internal auditors. Audit checklists, tips, etc. 4th year. Sysop: Vance L. Jochim. [Exp. #70]

805

Surfside Adult Interaction BBS. (805)984-8876. 24 hrs., 300/1200/2400. Multi-line, chat, E-mail, matchmaker, database, PD libraries. [Exp. #70]

818

ACCESS LA! California's Favorite Adult BBS. (818)859-8128. 8-N-1, 24 hrs., 300/1200/2400. Live chat, e-mail, games, giant message bases, tons of software. Voice: (818)357-9570. [Exp. #70]

Americom. (818)967-3108. 10 pm–8 am, 300/1200/2400. Multi-topical BBS with special interest in HAM/SWL and scanners, home video/audio, the arts and medicine. [Exp. #70]

Channel Z. (818)440-0892. 24 hrs., 1200/2400. 7000+ files on CD-ROM. Sysop: Brad Strausbaugh. [Exp. #71.]

Hard Ball PCBoard. (818)718-0610. 8-N-1, 24 hrs./7 days, 1200/2400. 380M Filebase for PC, PS/2, compatibles. PC-SIG library, msg. base. On-line doors and games. Sysop: The Umpire. [Exp. #70]

The Drawing Board. (818)965-6241. 8-N-1, 24 hrs., 1200/2400. Mac DTP, graphics, calligraphy, typography. Sysop: Char Rice. [Exp. #70]

The MOG-UR's EMS. (818)366-1238. 24 hrs., 1200/2400/9600/14400 v.32/HST. Multi-line, multi-user, network mail, large msg. base, extensive file library (65Mb), online since Jan. '81. Sysop: Tom Tcimpidis. [Exp. #71.]

Valley Apple BBS. (818)782-6471. 24 hrs., 300/1200/2400. UL/DL, public domain, games. Sysop: Maurice Bernstein. [Exp. #70]

912

Potpourri Software Exchange. (912)729-7627. 8-N-1, 24 hrs., 300/1200/2400. MS-DOS and CP/M Software Exchange, 140Mb of public domain and shareware files. Technical BBS for help implementing software, free system, 4 hrs/day limit. X, Y, Z-modem protocols supported. Sysop: Wayne Masters. [Exp. #71.]

PROFESSIONAL ASSOCIATIONS

Atari Association of Orange County. Meetings: 2nd Sun., 12:30, Rancho Santiago College, Rm W101, Santa Ana. Call: BBS (714)969-9053. [Exp. #73]

USER GROUPS

ACCOUNTING

ACCPAC & Open Systems Users Group. Meetings: 1st Tuesday, 7:00 pm. Irvine. Call: Bob Jaffer, (714)962-4760. Speakers and demos. [Exp. #70]

AMIGA

LAAUG—Los Angeles Amiga User Group. Meetings: 3rd Wednesday, 7:30 pm. Veteran's Memorial Auditorium, Overland Ave. & Culver Blvd. Call: Dick Freytag, (213)390-3010. Many SIGs, Rookies, DTP, Video, Monthly PD disks. [Exp. #70]

APPLE

Valley Apple Computer Club. Meetings: 3rd Tuesday, 7:30 pm. Union Federal Savings and Loan, 7040 Sepulveda Blvd. Call: Dr. William H. Trent, (818)988-1752. [Exp. #70]

CM/P

OKOK Computer Users Group. Meetings: Altadena Public Library. Guests are welcome at no charge. Public domain libraries for CP/M and MS-DOS. Call: Dick Smith, (818)446-0935. BBS: (818)446-5937. [Exp. #74.]

COMMODORE

South Bay Commodore Users Group. Meetings: 3rd Thurs, 7:00 pm. Mercury Savings and Loan, 22939 Hawthorne Blvd., Torrance. Free and open to all who use or own Commodore Computers and to those who would like to receive or exchange information on programs, application or hardware. Call: David Legalley, (213)324-8357. [Exp. #74.]

DBASE

UCLA PCUG dBASE SIG. Meetings: 3rd Wednesdays, 7:30 pm. UCLA, Franz Hall rm.1571. Call: Tom Rombouts (213)538-7108. [Exp. #70]

EPSON

Epson User Group of Orange County. Meetings: 3rd Wednesday, 10:00 am. Call: Bob Lafitte (714)548-1741 or 974-5072. Support, parts, library—QX, PX, Equity, VALDOCS, CP/M, MS-DOS. [Exp. #70]

IBM & COMPATIBLES

Crescenta-Canada Compatible Users Group (CCCUG). Meetings: 1st Wed., Glendale Federal Bank, 2350 Honolulu Ave., Montrose. Call: Roy Likins, (818)353-4316. [Exp. #74.]

Greater South Bay Users Group. Meetings: 2nd Wed., 7:30 pm. Fellowship Hall, rear of Christ The Lutheran Church, 2706 W. 182nd St., Torrance SIGs, BBS, newsletter, library and more. Call: Pamela Harrison, (213)373-4465. [Exp. #70]

Kern Independent PC Users Group. Meetings: 2nd Thurs., 7:00 pm. Kern County Superintendent of Schools boardroom, 5801 Sundale Ave. Call: (805)322-8800. [Exp. # 74.]

OKOK Computer Users Group. Meetings: 2nd Wed., Altadena Public Library. Guests are welcome at no charge. Public domain libraries for CP/M and MS-DOS. Call: Dick Smith, (818)446-0935. BBS: (818)446-5937. [Exp. #74.]

Orange Coast IBM-PC User Group. Meetings: Last Saturday, 9:00 am. Orange Coast College, Costa Mesa. Call: Robin Clark, (714)843-2048. [Exp. #70]

Orange County IBM-PC Users Group. Meetings: 2nd Tuesday, 7:00 pm. Computer Learning Center, 1240 S. State College Blvd., Anaheim. Call: Mike Lyons, (714)774-3236. Meetings feature guest speakers, sharing tips and problems, access to club library and newsletter. [Exp. #70]

continued

MICRO CITY SM
COMPUTER SUPERSTORE

WAREHOUSE
OPEN TO THE PUBLIC
Serving Your PC Needs
Since 1984

THIS MONTH'S SPECIAL
EPSON EGA MONITOR & EGA CARD **$375**

BEST PERFORMANCE SYSTEMS — LOWEST PRICES, 1 YEAR WARRANTY

HOME SYSTEM
Top-286, 12MHz
- 12MHz, 80286-12 CPU
- 512KB Memory
- 1.2 MB High Density Drive
- 220W Power Supply
- 101 Enhanced Keyboard
- MGP Card
- Monochrome Monitor
- Serial Port
- Epson LX-810 Printer
- Parallel Cable

$849

BUSINESS SYSTEM
Top-386, 25MHz System
- 25MHz, 80386-25
- 1MB Memory, up to 8MB
- 1.2MB High Density Drive
- 220W Power Supply
- FDC/HDC Card
- 101 Enhanced Keyboard
- MGP Card
- Monochrome Monitor
- Serial Port
- Epson LQ-1010 Printer
- Parallel Cable

$1825

PROFESSIONAL SYSTEM
Top-386 SX System
- 16MHz, 80386SX, 0 Wait State
- 1MB on board (up to 8MB)
- 1.2MB High Density Drive
- FD/HD Controller
- 101 Enhanced Keyboard
- 220W Power Supply
- MGP Card w/Parallel Port
- Monochrome Monitor
- Serial Port
- Epson LQ-510 Printer
- Parallel Cable

$1199

MICRONICS 386
20MHz Micronics, 386 System
- 20MHz, 80386
- 1 MB Memory
- 1.2MB Drive
- FDC/HDC Card
- 101 Enhanced Keyboard
- 220W Power Supply

$1075

25MHz Micronics, 386 System w/32K Cache
$1575

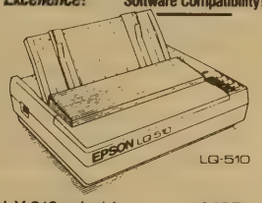
33MHz Micronics, 386 System w/32K Cache
$1875

25MHz Micronics, 486 System
$3495

EPSON EPL-6000 LASER PRINTER
- 300 by 300 dots per inch resolution
- Fast six pages per minute speed
- Six resident fonts
- Compatible with popular cartridge and soft fonts
- Prints on a variety of paper types
- SelecType font control panel
- Epson's one year limited warranty

$949

Letter Quality Excellence! — Maximum Hardware AND Software Compatibility!



LQ-510

LX-810 w/cable	$185
LQ-510 w/cable	$325
LQ-1010 w/cable	$435

(Complete Epson Printer Line)

(Call for Best Price)

EQUITY™ 386SX

- 16MHz 80386SX
- MS-DOS 4.01 Included
- Standard 1.44MB Drive
- 1MB Memory
- Epson's One Year Warranty

$1375

EPSON
Complete System with

EQUITY™ I+

- 720KB Drive
- MCGA Display Card
- 10MHz, 8086
- 640KB Memory
- Serial/Parallel/Mouse Ports
- MS DOS 3.3
- VGA Monochrome Monitor

ONLY $774.00

(Less Epson rebate $75.00)

YOUR NET COST **$699.00**

(List Price $1398.00)

!!! THAT'S 50% OFF !!!

SOFTWARE • BOOK

MS DOS 3.3	$ 59.98
MS-DOS 4.01	$ 64.95
PC Tool V5.5	$ 69.00
DBASE IV (1.0, 5¼)	$459.00
Word Perfect 5.1	$259.00
Microsoft Excel 2.1	$299.00
Allways	$ 79.00
Harvard Graphics	$299.00
Lotus 1-2-3 (3.0)	$389.00
Page Maker	$499.00
Wordstar 5.5	$229.00
Q & A	$229.00
PFS: First Choice	$ 95.00
Laplink III	$ 89.00

MODEM

Smart One 2400 Int.	$ 89
Smart One 2400 Ext.	$109
Hisland 2400 Int.	$ 75
Hisland 2400 Ext.	$109
Hisland 1200 Pocket	$ 75
Hisland 2400 Pocket	$119
Hisland 1200 Ext.	$ 75

LASER PRINTER

Epson EPL-6000	Meet Any Price
HP Deskjet plus	$ 649
HP Laser III	$1575

UPS AND POWER ACCESSORIES

Tripplite 325W UPS	$280.00
Tripplite 450W UPS	$325.00
Power Center	$ 17.95
Master Piece	$ 89.00
150W/220W/275W Power Supply	From $ 39.95

MONITORS

NEC IIA (800V, 600, VGA)	$499
NEC 3D (1024x768, 0.28mm)	$599
Samsung 14", Multisync	$429
Zenith 14", Flatscreen VGA 1492	$609
Hyundai EGA Monitor	$299
Samsung 14", Flat, SM-430	$ 95
Hyundai VGA	$309
Sony 1304	$639
Sony 1302 (800x600)	$565
Casper TTL Monochrome	$ 72

VIDEO CARDS

Paradise VGA Plus 16	$199
TATUNG VGA (16 bit, Paradise OEM)	$145
ATI VGA Wonder (258K) w/Mouse	$249
Video 7 Fastwrite	$239
Video 7 VRAM, 256K	$389
Orchid Prodesigner VGA	$259
Orchid Prodesigner 800	$159
Orchid Prodesigner VGA+	$349
M2 EGA (800x600)	$109
ATI VGA Wonder w/256K	$209
Lucky Star MGP w/Parallel	$ 35

PRINTERS

PANASONIC

Panasonic 1180 (80 col., 192 cps)	$175
Panasonic 1191 (80 col., 240 cps)	$219
Panasonic 1124 (80 col., 192 cps)	$285
Panasonic 1624 (132 col., 192 cps)	$429
Panasonic 1595 (132 col., 288 cps	$439

CITIZEN

GSX-140 (24 pin, 192 cps)	$319

(Printer Stand/Ribbon/Cable Available)

FLOPPY DRIVE

TEAC 360KB	$59.00
TEAC 720KB	64.95
TEAC 1.2MB	$74.95
TEAC 1.44MB	$79.95
Toshiba 1.2M	$72.00
Toshiba 1.4M	$75.00

MOUSE

Logitech Trackman (Serial)	$ 85.00
Logitech Hi-Res, PS/2	$ 79.00
Logitech Hi-Res, Serial	$ 69.00
Logitech Hi-Res, Bus	$ 75.00
Microsoft Mouse	$ 84.95
Microsoft Mouse W/PB, Bus	$ 99.00
Microsoft Mouse W/Window	$129.95
GVC Optical Mouse	$ 49.00
Genius Mouse	From $ 29.95

SCANNER

Logitech Scan Man Plus	$189
DFI Hand-Scan	$159
DFI Hand-Scan 3000 Plus	$189
Complete Half-Page Scanner	$195

HARD DRIVE

Seagate ST-125, 20MB, 3½"	$ 229
Seagate ST-138, 30MB, 3½"	$ 289
Seagate ST-225, 20MB	$ 189
Seagate ST-251-1, 40MB, 28 ms	$ 305
Miniscribe 8438, 30MB	$ 219
Miniscribe 8450, 40MB	$ 275
Mitsubishi 535	$ 389
CDC 155MB ESDI	$1095
Toshiba 44/66MB	$ 399
Toshiba 110MB (72 PCR)	$ 649
Toshiba 155MB ESDI	$ 949

MISCELLANEOUS

Complete Answering Machine	$239.00
Complete FAX-9600	$439.00
Two Plus Two w/1MB, IIP	$259.00
1-2-4 w/1MB, II & IID	$219.00
25 In One, II & IID	$289.00
80287-8 Math-Coprocessor	$195.00
80387-20 Math-Coprocessor	$385.00
ARCHIVE 60MB tape backup Internal	$575.00
JUMBO 40M/60MB Tape Backup	$275.00
Printer Buffer	$154.95

Authorized Dealer For:
EVEREX STEP · Panasonic Office Automation · EPSON · VIDEO 7 SEVEN · AST RESEARCH INC. · SBT · NOVELL · Hp

SANTA ANA	CITY OF INDUSTRY	VAN NUYS	SAN JUAN CAPISTRANO	BUENA PARK
1701 E. EDINGER AVE., #D	17351 E. GALE AVE., #A	6265 SEPULVEDA BLVD., #9	(OPEN SOON)	8322 ARTESIA BLVD., #A
(714) 543-4922	(818) 912-6777	(818) 781-0698		(714) 739-9609

- MasterCard, VISA accepted without extra charge.
- Prices good thru May 31, 1990

HOURS:
MON-FRI: 10:00 — 7:00
SAT: 10:00 — 5:00

PRICES SUBJECT TO CHANGE WITHOUT NOTICE

RESOURCES

Pasadena IBM Users Group. Meetings: 3rd Wednesday. 6:30 pm. Caltech, Bridge bldg., rm 201. Call: Steve Bass, (818)795-3200. 3 hr. meetings have speakers on hardware and software topics including "tips and tricks," "stump the stars" and vendor demonstrations. Includes group library, newsletter, SIGs and BBS. [Exp. #70]

SWPC User Group. Meetings: 3rd Saturday, mornings, various places. Call: Christine Tripp, (213)935-4105. [Exp. #70]

UCLA PC Users Group—PCUG. Meetings: 2nd Tues., 7:00 pm. PCs and compatibles, soft, & hardware discussed and cussed, BBS and more. Free. Call: (213)473-6668. [Exp. #74.]

KAYPRO

The Lakewood/Long Beach KUG (Kaypro Computers). Meetings: 2nd Wednesday, 7:30 pm. Mid Cities Bank, 9025 E. Artesia, Bellflower. Call: Mark Motley, (213)928-9096. [Exp. #70]

K-MAN

The Southern California K-Man Users Group. Meetings: 1st Wed., 7:00 pm. Laventhol & Horwath, Executive Con. Rm., 7th Fl., 3699 Wilshire Blvd. Call: (213)381-5393. [Exp. #74.]

LOTUS & BUSINESS

Lotus and Business SIG. Meetings: 1st Sundays (verify at (718)998-8080). 11:15 am., Chapman College, City of Orange, Hashinger Hall. Call: Vance Jochim, (714)962-2517. SIG of 1200-member N. Orange County Computer Club. [Exp. #70]

MACINTOSH

San Gabriel Valley Mac Users Group. Meetings: 1st Thursday, 7:30 pm., 285 E. Walnut, Pasadena Central Library Auditorium. Call: Char Rice, (213)684-4266. [Exp. #70]

Whittier Area Mac Users Group. Meetings: 2nd Saturday, 10:00 am, 11818 S. La Mirada Blvd., Granada Heights, Friends Church, rm C-21. Call: Char Rice, (213)947-2447. [Exp. #70]

Pomona Valley 99ers. Meetings: 2nd Monday, 7:00 pm, First Federal, 9900 Central Ave. Call: Bill Harms, (714)628-1334. [Exp. #70]

Is Your Listing Missing?

Free user group and association listings are limited to the group's name and a ten-word description, **including the mailing address and contact phone number.** They will be deleted at six-month intervals to ensure timeliness and accuracy of information.

Free BBS listings are also limited to the board's name, sysop's name, and a ten-word description including parameters, baud rate and phone number. Because we have an ongoing problem of boards shutting down without telling us, much to the annoyance of would-be callers and the phone number's new owner alike, we will delete these listings after they've run three months.

You can update or renew your listings at any time. So if yours is missing, send us one now!

Send your listing information to: MicroTimes User Groups, 5951 Canning St., Oakland, CA 94609

Whether your office has one computer or one hundred...

We keep you working

AUTHORIZED TECHNICAL SERVICES has the experience *and* the expertise to handle your equipment service needs. Whether you're running one small office with one micro computer, or a statewide network of offices with a complex inventory of computers, video display terminals, printers, and data communications devices—you simply cannot afford "down time". Call **ATS** today to find out just how easy it is to stay productive after hardware failures.

ATS
AUTHORIZED TECHNICAL SERVICES
1-800-451-4057

HERE'S A PARTIAL LIST OF EQUIPMENT WE SERVICE:
MICROCOMPUTERS: Advance Logic (ALR), AT&T, Everex, Leading Edge, AST Research, Compaq, IBM. **LOCAL AREA NETWORKS:** 3Com, Novell. **STORAGE DEVICES:** IOmega (Bernoulli). **DOT MATRIX PRINTERS:** Alps, Datasouth Epson, NEC, Qwint, Texas Instruments, C. Itoh, Digital Equipment (DEC), IBM, Okidata, Printek, Toshiba. **PLOTTERS:** Hewlett-Packard, IBM. **THERMAL PRINTERS:** IBM, Texas Instruments, Panasonic. **LINE PRINTERS:** Data Products, Printronix. **LETTER QUALITY PRINTERS:** C. Itoh, Diablo, NEC Spinwriters. **LASER PRINTERS:** Canon, Epson, Hewlett-Packard. **VIDEO DISPLAY TERMINALS:** Digital Equipment (DEC), Lear Siegler, Liberty (Freedom), Link, Qume, Tab, Televideo, Wyse. **GRAPHICS TERMINALS:** Graph-On, Northwest Digital, Pericom. **DATA COMMUNICATIONS:** Hayes, Prentice.

ATS SERVICE CENTERS:
Los Angeles (213) 568-8862
Orange County (714) 937-0332
Oakland (415) 638-4449
Sacramento (916) 923-2944
San Jose (408) 970-9860

Look No Further!
We Have It ALL!

High Quality - Low Cost - Service & Support

P.G. MICRONICS 20 MHz 80386 SYSTEM

- 20/8/6 MHz Micronics
- 80386 System (0 Wait State)
- AWARD/PHOENIX BIOS for total compatibility
- 1 MB Static column RAM installed
- COMPAQ 386/OS2/UNIX Compatible
- 16-bit hard/floppy disk controller
- One 1.2MB FDD
- Monochrome monitor
- Monographic card and printer port
- Enhanced Keyboard, AT/XT switchable
- 230 Watts Power Supply
- Deluxe AT Case

$1395

P.G. 386-33 MHz CACHE SYSTEM

- 80386 w/Intel 33 MHz CPU
- 32KB Cache
- One MB Ram on Board
- One 1.2 MB FDD
- One 16-Bit Hard/Floppy Disk Controller
- Monographic Adapter and Printer Card
- Enhanced Keyboard
- Monochrome Monitor
- Deluxe AT Baby Case or Mini Tower Case

$1795

P.G. 25 MHz 80386 SYSTEM

- 80386-25 MHz MB
- One MB RAM on Board
- One 1.2MB FDD
- Monographic Card and Printer Port
- Monochrome monitor
- Deluxe AT Baby Case or Mini Tower Case
- Enhanced Keyboard
- 16-Bit Hard/Floppy Disk Controller

$1250

P.G. 386SX-16 MHz SYSTEM

- 80386SX-16 MHz MB
- One MB Ram on Board
- One 1.2 MB FDD
- Monographic Card and Printer Port
- Monochrome Monitor
- Deluxe AT Baby Case or Mini Tower Case
- Enhanced Keyboard
- 16-Bit Hard/Floppy Disk Controller

$835

P.G. 12 MHz 286 SYSTEM

- 80286-12 MHz MB
- 640K RAM on board (up to 1 MEG)
- One 1.2 MEG FDD
- One 30 MEG Hard Disk Drive
- 200 Watt Power Supply
- Monographic Adapter w/Printer Port
- Monochrome Monitor
- Enhanced Keyboard
- 16-Bit Hard/Floppy Disk Controller
- Deluxe AT Baby Case or Mini Tower Case

$895

NETWORKING

P.G. 20 MHz 386 NETWORK SYSTEM

FILE SERVER - 386/20 MHz

- 1 20 MHz 386 MOTHERBOARD
- 1 2 MB RAM
- 1 1.2MB FLOPPY DD
- 1 WD DUAL CONTROLLER
- 1 80 MB HDD (28MS)
- 1 ARCNET CARD
- 1 12" AMBER MONITOR
- 1 80 COLUMN CARD MGP
- 1 101 KEYS ENHANCED KB

WORKSTATIONS - 286/12 MHz

- 2 12 MHz AT
- 2 640K RAM
- 2 ARCNET CARD
- 2 1.2 Meg FDD
- 2 80 COLUMN MGP CARD
- 2 12" AMBER MONITOR
- 2 101 KEYS ENHANCED KB

NETWORK INTERFACE

- 1 NOVELL ELS NETWARE II V2.12
- 3 RG-62 CABLES (25 FEET EA.)
- 1 4-PORT PASSIVE HUB

NOVELL SYSTEM INSTALLATION AND ALL HARDWARE ASSEMBLY INCLUDED

$4950

FREE ESTIMATES

SPECIALS

8 Bit ArcNet Card	$65
16 Bit ArcNet Card	125
8 Bit NE-1000 Compatible Card	110
16 Bit NE-2000 Compatible Card	160
8 Port ArcNet Active Hub	165
40 MB Tape Backup System-DJ-10	250
500 MB Tape Backup System w/Controller	950
Laser Printer MT-905 (HP Series II Compatible)	1200

Leasing and Financing O.A.C. We carry a complete line of accessories

P.G. COMPUTERS

Your One Stop Computer Store
2525 W. Beverly Blvd., Montebello, CA 90640

Business Hours:
Mon.-Fri. 10:00-7:00
Sat. 11:00-5:00

213-724-6516
213-724-6338

All trademarks acknowledged. Prices subject to change without notice. We reserve the right to limit quantities.

This magazine's got your name, your rank and your number

The better we know you, the better our chances of writing articles you'll find relevant and useful. The same holds true for our advertisers.

Knowing who you are (your name, job title, company and industry) enables them to more easily develop messages which meet your informational requirements.

Circulation information helps advertisers determine who you are, what to say and where to say it. And since advertisers support our publication and allow us to keep bringing you high quality editorial, we think they deserve the most reliable and current circulation facts and figures available.

BPA (Business Publications Audit of Circulation, Inc.) helps us provide it. An independent, not-for-profit organization, BPA audits our circulation list once a year to verify that it's accurate and up to date.

The BPA audit makes sure our advertisers get the readers they pay for. And when advertisers get the readers they pay for, chances are they get the results they pay for, too.

BPA. For readers it stands for meaningful information. For advertisers it stands for meaningful readers. Business Publications Audit of Circulation, Inc.
360 Park Ave. So., New York, NY 10010. BPA

We make sure you get what you pay for.

California's Computer Magazine
MICROTIMES™

STOP

DON'T TURN THE PAGE, WE HAVE THE BEST

Specialists in Laser Printer Enhancement Products

SEAGATE

20 Meg w/Controller	$249
30 Meg w/Controller	269
Seagate 40 Meg 28ms	339
Seagate 80 Meg 28ms	559
Floppy Controller	29
XT 1.2 Meg Floppy Controller	54
150 Watt Power Supply	59
AT Keyboard w/Trackball	99
Clock Card	29
Serial Card	34
Multi I/O	49
MGP DFI w/Color Emulator	49
CGA Card w/Printer Adapter	55
EGA Autoswitch	99
No Slot Card	39
Hard Drive Controller	59
RLL Controller for HD	65
Max Flight Yoke	75
AST 6 Pack Plus w/384K	195
VGA Adapter w/512K	199

NEC MONITORS

Multisync IIA	$499
Multisync 3D	599
Multisync 4D	1225
Multisync 5D	2250

EPSON

LX810	$195	LQ850 330	$519
FX1050	439	LQ950	569
LQ510	335	LQ1050	719
		LQ2550	919

APPLE

Mac IIx 1 Drive	$3650
Mac IIx 1 Drive, 40MB	3950
Mac IIx, 1 Dr., 4MB Ram, 50MB	5049
Mac IIcx, 1 Dr., 1 MB	3100
Mac IIcx, 1 Dr., 1 MB, 40MB	3600
Mac IIcx, 1 Dr., 4 MB, 50MB	4949
Mac II 13" Color	690
ImageWriter II	400
ImageWriter LQ	989
Laser SC	1880
Laser NT	3300
Laser NTX	4599

PACIFIC DATA

25 Fonts In One	$269
Plotter In A Cartridge	229
Pacific Page (Postscript) for II/IIP	449/359
Headlines Font	229

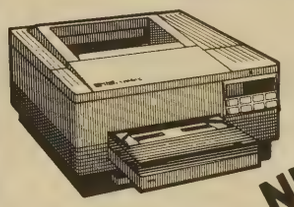
RAM UPGRADES

1 Meg Upgrade for LaserJet II	$219
2 Meg Upgrade for LaserJet II	314
4 Meg Upgrade for LaserJet II	500
1 Meg Upgrade for LaserJet IIP	239
2 Meg Upgrade for LaserJet IIP	339

PANASONIC

KX1180	$199
KX1124	309
KX1624	449

HEWLETT PACKARD



NEW

★ HP Series III ★

Best Price$

$1489*

HP LaserJet IIP

$899*

*with purchase of Pacifc Data Product; toner extra

All HP Lasers
Epson Lasers
Toshiba Lasers
Panasonic Lasers

RENTALS AS LOW AS $195 PER MONTH

APPLE • MAC • IBM —Lasers/Computers—Daily & Weekly—

★ MONTHLY SPECIALS ★

MS DOS 3.3
$49

SEAGATE ST225
$165

AUTHORIZED RESELLER FOR: Archive, Ashton Tate, AST, ATI, Brother, Canon, Citizen, DFI, Everex, Fujitsu, GoldStar, Intel, Logitech, MainLan, Micropolis, Mitsubishi, Murata, NEC, Novell, Okidata, Pacific Data, Panasonic, Paradise, Phoenix, Seagate, Sharp, Star, Sony, Toshiba, Western Digital, Ventura, WordPerfect, Zenith

In Business Since 1986

NEW YORK (516) 338-4949
WEST LA (213) 474-9811

SF VALLEY
19317 Ventura Blvd.
(818) 342-4488

QUALITY DISTRIBUTION GROUP
Quality Is Our Number One Priority

Terms: All goods are brand new and guaranteed. All advertised prices already include a 4% cash discount for full payment by cashier's check, money order or cash. Add 4% for credit card purchases. Prices subject to quantity available, correction or change without notice. You may call for the latest prices.

CLASSIFIEDS

BULLETIN BOARDS | HARDWARE FOR SALE | HARDWARE FOR SALE | HARDWARE FOR SALE | SERVICES | SERVICES

OWN A NEW BRANCH
GOOD OPPORTUNITY
Sub Lease 800 sq. ft.
Ready To Go Computer, Software & Supplies Store.
In Heart Of Century City Business High Rises.
2040 Ave. Of The Stars
ABC ENTERTAINMENT CENTER
Call Weekdays 9-5
213-556-5411

AST Turbo Laser P/S Postscript Printer
- 35 Fonts
- True Adobe
- 3MB Ram
- 8 Page/Min.

Retail ~~$5,995~~
AJ Price $1995
While Product Lasts
Brand New!

AST POSTSCRIPT PLUS 3
- HP Series II Emulation
- Diablo Emulation
- 3 Meg. RAM & 35 Fonts Built-In
- Parallel, Serial & Apple Talk

Retail ~~$6,995~~
AJ Price $2495

A.J. Computer Supplies
5122 Bolsa Ave, Suite 107
Huntington Beach, CA 92649
(714) 895-5802

Amiga 500, IMB + 1.3 software, $450/obo. GVP 500, 20 MB harddrive, $450/obo. Both $850. Paul (818) 718-2839.

386 25MHz, 32KB SRAM, 82385, 1MB, 1.2MB drive, 230W UL, 720x348, monochrome, $1947. (714) 551-4120.

ImageWriter II. Perf cond, hardly used by little old librarian, $175. (818) 989-0887; (818) 780-1308.

Computer training, introduction to computers, WordPerfect, Lotus, dBase, custom programming, sales, service, Compumatics consultants. (213) 657-8632.

Multi user systems, my specialty. Accounting & manufacturing packages. Expert in State-of the-Art MAS90 software & Lotus. Free consultation. Fred (714) 253-4624.

CAD * SCANNING
- CAD DRAFTING
- SCANNING SERVICES
- A-E SIZES
- INEXPENSIVE

(E SIZE AVERAGE $180)
(818) 344-8472

J. Rose Mailers, direct mail service for all size mailings. List broker, printing Tustin. (714) 259-1940.

Adult Modem Fun!

- West Coast's Hottest Adult BBS
- Over 10,000 Shareware Programs
- CB-Style Group and Private Chat
- Exotic Adult Sections
- Giant Message Bases
- Interactive Multiplayer Games
- Access Numbers in 750 US Cities
- Must Be Over 18

INFO & SIGN UP BY MODEM
1-800-HOTTFUN

VOICE INFO:
(818) 357-9570
(3/12/24 Baud 8/N/1)

ACCESS
LA!

REPAIRS

Epson repair. All old printers & computers. QX-10, PX-8, Equity, Comrex, NCR, Citizen, FX-LQ prtrs. Authorized service parts order. PCP Repair (714) 545-1595.

SERVICES

SIMMS		MATH CO-PRO	
256x9-100	$28	80287-10	$205
256x9-80	$33	80287-12	$280
		80287-20	$325
1Mx9-100	$84	80387-16	$299
1Mx9-80	$89	80387SX-16	$285
1Mx9-70	$95	80387-20	$349
		80387-25	$445
		80387-33	$545

UNIVERSAL (818) 960-2398

The Midnight Express BBS. 300-2400 baud. Free access. Games, graffiti wall, discussions. (213) 878-6700.

Programmers Pit. (818) 964-0490. 3/12/2400 baud 8NI, serving the programmers every need.

Motherboard 486-25C + CPU, $2850. 386-25 + CPU, $640. 286-12 + CPU, $150. (408) 998-1810.

Osborne I computer, software, books. Worked the last time my husband used it. $200/obo. (714) 549-1472.

HARDWARE FOR SALE

VERSATECH
• Computer Hardware • Software • • Supplies •
SERVICE & SUPPORT
Below Retail Pricing on All Major Brands
(213) 489-3848
(714) 640-1901
(619) 546-9080

SPECIAL
VGA Monitor
VGA 16 Bit Card
$399

FREE
Modem
w/ purchase of any system

COMPUTER PACER
1460 Monterey Pass Rd. #B Monterey Park, CA 91754
(213) 262-1087 Fax: (213) 264-1481
(See our full page ad for more products)

YOUR LICENSED COMMUNICATIONS SOURCE

- VOICE
- DATA
- NETWORK PLANNING
- EQUIP. INSTALLATION
- TROUBLE SHOOTING
- PRE-WIRE
- TWISTED PAIR
- ETHERNET
- TOKEN RING
- CUSTOM INTERFACES
- WORD PROCESSING/ DESKTOP PUBLISHING

ST. LIC. #581276 BONDED/INSURED
SEA QUAIL COMMUNICATIONS
CONTRACTORS (800) 848-TECK
(213) 318-2383

To Place A Classified Ad:

FREE ADS: Private individuals may have one free classified ad of 15 words or less (in all categories EXCEPT "Personal"). Additional words are 50¢ per word. A phone number, including area code, counts as one word. If you want your ad to run more than once, all subsequent printings will be charged at one half business rates.

BUSINESS ADS: Rates are $15 for 15 words or less. 50¢ for each additional word. Again, your phone number counts as one word.

TO ORDER BY MAIL: SEND COUPON TO:
MicroTimes Classifieds
1800 N. Highland, #506
Hollywood, CA 90028

TO ORDER BY PHONE with Visa or MasterCard only, call **(213) 467-7878**

For a mere fraction of your paycheck—buy, sell, trade . . . whatever! Just $15 for the first 15 words plus 50¢ for each additional word, per issue.

CATEGORY
- ❑ Bulletin Boards
- ❑ Equipment
- ❑ Hardware For Sale
- ❑ Jobs Offered
- ❑ Jobs Wanted
- ❑ Office Space
- ❑ Personal
- ❑ Repairs
- ❑ Services
- ❑ Software For Sale
- ❑ Video
- ❑ Wanted
- ❑ Will Trade

No refunds will be given after copy is received. Credit may be given under certain circumstances

Cost of ad_____ **X number of issues to run** _____ **= Amount Enclosed**_____

Send Check ❑ Money Order ❑
Visa ❑ or MasterCard ❑ Exp. Date _____

Account Number

Signature

Advertisers Name_____

Street Address_____

City_____ State_____ Zip_____

Phone (_____) _____

Send To: MicroTimes Classifieds, 1800 N. Highland, #506 Hollywood, CA 90028

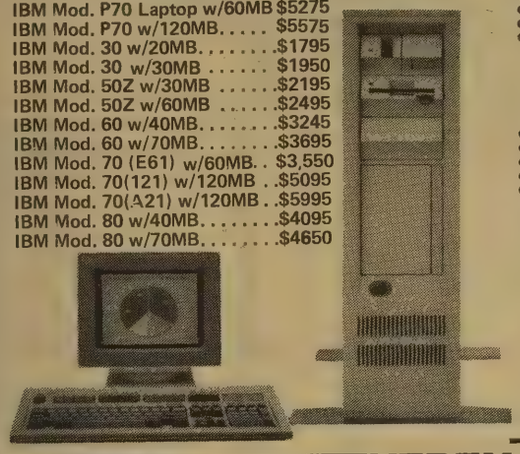
DEADLINE FOR INSERTION IN THE MAY 28, 1990 ISSUE IS NOON ON MONDAY, MAY 14, 1990

A Small Sampling from our Huge Showroom!

COMPUTERS

IBM

IBM Mod. P70 Laptop w/60MB $5275
IBM Mod. P70 w/120MB..... $5575
IBM Mod. 30 w/20MB.....$1795
IBM Mod. 30 w/30MB $1950
IBM Mod. 50Z w/30MB $2195
IBM Mod. 50Z w/60MB $2495
IBM Mod. 60 w/40MB.....$3245
IBM Mod. 60 w/70MB.....$3695
IBM Mod. 70 (E61) w/60MB.. $3,550
IBM Mod. 70(121) w/120MB ..$5095
IBM Mod. 70(A21) w/120MB ..$5995
IBM Mod. 80 w/40MB.....$4095
IBM Mod. 80 w/70MB.....$4650



ENTERPRISE 286

- 286 – 12MHz, 0 wait state
- 512K – expandable to 4MB
- Controller for floppy & hard disks
- 1.2MB floppy drive
- 101-key enhanced keyboard

12-MHz $699

- 286 – 16MHz, 0 wait state
- 512K – expandable to 8MB
- Controller for floppy & hard disks
- 1.2MB floppy drive
- 101-key enhanced keyboard

16-MHz $859

ENTERPRISE 386

- 386 – 20MHz, 0 wait state
- 1MB – expandable to 8MB
- Hard disk/floppy controller
- 1.2MB floppy drive
- 101-key enhanced keyboard

20-MHz $1235

- 386 - 25MHz, 0 wait state
- 64K cache memory
- 1MB - expandable to 8 MB
- Hard disk/floppy controller
- 1.2MB floppy drive

25-MHz $1750

ENTERPRISE 386SX

- 386 SX – 16MHz
- 1MB – expandable to 8MB
- Hard disk/floppy controller
- 1.2MB floppy drive

16-MHz $899

ENTERPRISE XT-TURBO

- 640K on mother board
- 8 expansion slots
- 101-key keyboard with LED's
- Parallel/Ser/game/clock
- 360K drive

10-MHz $469

EVEREX

Step 286-12MHz System, 1MB memory, 1.2MB & 40MB Dr., 640x480 VGA combo $1995
Step 386-20MHz System, 1MB, 64K cache,1.2 & 40MB Dr., 640x480 VGA combo $3250
Step 386-25MHz System,1MB, 64K cache, 1.2 & 40MB Dr., 640x480 VGA combo $3595
Step 386-33MHz System, 2MB, 64K cache, 1.2 &150MB Dr., 1024x768 VGA combo $5595

AGI Computer, Inc.

10MHz 286, 512K $795
12MHz 286, 1MB..... $959
16MHz 286SX, 1MB $1,165
20MHz 386, 1MB..... $1,595
25MHz 386, 1MB..... $2,395
33MHz 386, 4MB..... $3,095

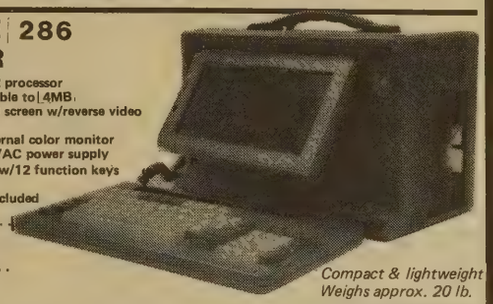
AST

AST 286-10MHz System, 1MB memory, 1.2 & 40MB drives, 640x480 VGA monitor & card $1895
AST 386-20MHz System, 1MB, 32K cache memory, 1.2 & 40MB drives, 640x480 VGA combo $3295

PORTABLE 286 COMPUTER

- 12-MHz, Intel 80286-12 processor
- 1-MB memory, expandable to 4MB
- 80x25-line back-lit LCD screen w/reverse video
- 1.2-MB floppy drive
- RGB color port for external color monitor
- Auto sensing 110/220 VAC power supply
- Full featured keyboard w/12 function keys
- 5 expansion slots
- parallel & serial ports included

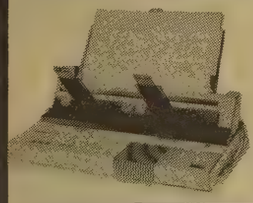
with 20-MB hard disk . **$1395**
with 40-MB hard disk .. **$1549**
Gas plasma screen . . . add $200



Compact & lightweight
Weighs approx. 20 lb.

386's also available

PRINTERS



brother

M1809, 360/50cps, 80 col . . . $379
M1909, 360/50cps, 132 col . . .$525
M1824L, 24-pin, 270/90cps, 80 col. $499
M1924L, 270/90cps, 132 col . $659
M4018, 480cps, 132 col.. . . $1,295
HR-20 – 22cps daisy printer, . $345
HR-40 – 40cps daisywheel printer w/ built-in sheet feeder. $579
HL-8e Laser, 8ppm, 1MB . . $1695
HL-8SP Laser w/PostScript . $2,995

EPSON

FX-850 – 264cps, 80 column . $369
FX-1050 – 164cps, 132 col.. . $535
LQ-850 – 24-in, 80 col. $549
LQ-1050 – 24-pin, 132 col . . $769

HEWLETT PACKARD

H-P Laserjet IIP, 4ppm w/toner . $call
H-P Laser Ver.II, 8ppm w/toner $call
H-P LaserJet 2D. . . . . $call
H-P DeskJet Plus, 4ppm $669

Seikosha

Seikosha – 300cps, 132 column, with color option. . . . $499

FUJITSU

Fujitsu 3400, 24-pin 132 column, 288/72cps, color optional. . . $499

FORTIS

Fortis DM2010, 200cps, 80 col .$325
Fortis DM2015, 200cps 132 col.$395

NEC

2200 –, 24-pin, 180cps, 80 col .$355
5200 – 24-pin, 265cps, 80 col .$565
5300 – 24-pin, 265cps, 132 col .$765

OKIDATA

320 – 300/100cps 80 col . . . $365
321 – 300/100cps, 132 col . . .$479
390 – 270/90cps, 80 col. $479
391 – 270/90cps, 132 col . . . $669
393 – 450/120cps, 132 col . . .$985
393C– above w/color $1075

PANASONIC

KX-P1180, 80 col. 192cps. . . . $189
KX-P1191, 80 col, 240cps. . . $249
KX-P3151, daisywheel, 22cps . $349
KX-P1124, 24-pin, 192cps. . . .$289
KX-P1624, 24-pin,192cps $435

TOSHIBA

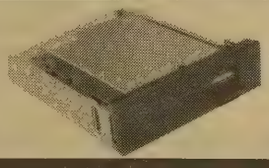
P311 ExpressWriter, 180. . . . .$379
Toshiba P321-SL– 24-pin $445
Toshiba P341-SL – 24-pin. . . .$585
Toshiba P351SX – 360cps. . . .$965

DRIVES

5.25" DRIVES

Teac, Fujitsu, Toshiba

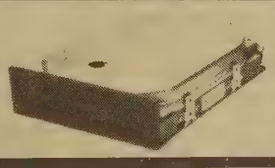
360K **$65** 1.2MB **$75**



3.5" DRIVES

Teac, Sony, Fujitsu, Toshiba

720K **$65** 1.44MB **$75**



HARD DISK SALE!

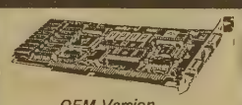
Seagate 225, 20MB w/o controller . . .$209
Seagate 225, 20MB w/controller $249
Seagate 251-1, 40MB, 28ms $329
Teac SD340, 43MB, 23ms, 3½", w/controller $389
Mitsubishi MR535, 40/65MB, 28ms . .$399
Micropolis 1335, 70MB, 28ms. $599

LAP-TOPS

Compaq LTE 8086/286 . . . . . Call
Toshiba T1000 . . . . . $639
Toshiba T1000SE. $1125
Toshiba T1200HB $1895
Toshiba T1600-20 . . . . . $2689
Toshiba T1600-40 . . . . . $3149
Toshiba T3100SX. $3750
Toshiba T3200 . . . . . $3195
Toshiba T5200-40 . . . . . $4595
Toshiba T5200-100. . . . . $4995
Bondwell B300, 80286, 20MB $1895
Weltec *20MB Portable Hard disk for Laptop. . . .*$650

Modem Sale!

Digitan 2400 internal modem . . $99
Everex 2400 internal $159
Everex 2400 external. $189
Everex Modem w/MNP. . . . add $30
Hayes 1200 external $225
Hayes 1200B internal w/Scom $225
Hayes 2400 external $279
Hayes 2400B internal w/Scom $279
MultiTech 2400E external Modem MNP error correction. $179
Telenetic 2400 external modem.$135
JET 2400 internal modem w/MNP error correction $95
JET 2400 w/MTE software to run at 4800 baud $125



OEM Version

ATI VGA WONDER

PC Magazine Editor's Choice

Super hi-res 1024x768, 16-bit, 256K, expandable to 512K (OEM) . . $185
Above with mouse $215

16-bit VGA, 800x600, 256K . . $99
Everex EMS memory card . .$129
Exima VGA card 800x600. . . $159
Exima VGA card 1024x768. . .$199

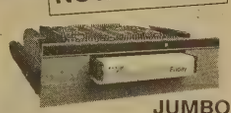
Hega Auto switch EGA card, 640x480, auto switch $89

Hi speed Monographic card w/parallel port. $39

Floppy controller for 360K, 1.2MB, 720K, 1.44MB drives. . . . $39

COLORADO MEMORY SYSTEMS INC.

NOW 120 MB!

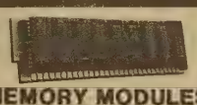


JUMBO

120 MB Low Cost Backup

- Fast — 40 MB in Under 11-1/2 Min.
- QIC-40 Interchange Standard
- Floppy Interface
- PC, XT, AT, and PS/2™
- Novell®, 3COM® and Xenix®

Internal unit w/tape $295
External unit w/ tape. $395

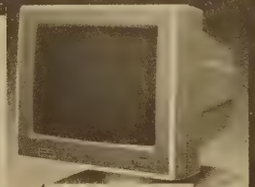


MEMORY MODULES

SIMM/SIP 256Kx9 - 100ns . . $39
SIMM/SIP 256Kx9 - 80ns . . $49
SIMM/SIP 1Mx9 - 100ns . . $120
SIMM/SIP 1Mx9 - 80ns. . . . $130
1MB for AST 386-25. . . . . $189
1MB for AST 386-33. . . . . $199
4MB for Compaq 386-25,/20E $575
2MB for Compaq 386-33. . $475
512K – Equal. IBM 30F5348 $125
2MB – Equal. IBM 30F5360 $250

MEMORY UPGRADE for H-P LASERJET

1MB for H-P Ver II, IID . . .$195
2MB for H-P Ver.II, IID . . .$279
4MB for H-P Ver.II, IID . . .$450
1MB for H-P IIP. $289
2MB for H-P IIP. $385
4MB for H-P IIP. $565



MONITORS

Mono Combo 720x348 .$129
RGB Combo . 640x200 .$249
EGA Combo . 640x350 .$459
VGA Combo . 640x480 .$475
ViewPerfect 2V 800x600 VGA .$349
ViewPerfect 3V 1024x768 VGA .$519
Amazing 8483 640x480 EGA . .$329
Amazing 8484 1024x768 VGA .$425
NEC 2A 14" VGA 800x600. . .$489
NEC 3D 14" VGA 1024x768 . .$595
Goldstar 1210A 12" Amber . . . $79
Goldstar 14" VGA $375

All goods are brand new and guaranteed. All advertised prices already include a 4% cash discount for full payment by cashier's check, money order or cash. Personal or company checks must clear 3 weeks before we ship. Add 4% for credit card purchases. COD's are accepted for UPS shipments only and require 20% paid deposit and $3 COD fee. No COD's to Canada, Puerto Rico, FPO/APO or P.O. Boxes. Shipping & insurance charges by UPS Ground: $5 (card/modem/drive/software), $10 (monitor/printer), $15 (computer/plotter), $25 (laser printer/UPS/copier). UPS Blue: 3X Ground. UPS Red: 4X Ground. P.O.'s accepted from government agencies, Fortune 1000 firms and major institutions. Calif. buyers add sales tax. Prices subject to quantity available, correction or change without notice. You may call for the latest prices.

EASTERN ENTERPRISES, INC.

Mass Merchandising Since 1969

6001 BANDINI BLVD., LOS ANGELES, CA 90040

VISA MasterCard AMERICAN EXPRESS

213-725-3080

Hours: Mon. - Fri. 8:30am - 5:00pm Pacific Time

FAX: (213)725-6689

IBM PC, XT, AT are registered trademarks of International Business Machines Corp.

CLASSIFIEDS

SERVICES

Illustrator avail for logo design, conceptualization & artwork. Professional & reasonable. Windgerbil Creations (213) 464-6001.

SERVICES

Personalized Macintosh Training — system basics, word processing, spreadsheets, graphics & more! Call Lesley Frana (818) 609-7353.

SERVICES

Music BBS
24 Hours a Day
818-508-9517

Windows Programming Contractor. MS Windows, X Windows, "C" programming. We program to fit and train. UDC (818) 780-4266.

Consultant: IBM PCs & compatibles: software installation, system design & maintenance, custom programming, & tutoring. (213) 835-6605.

Computer Graphics Services. AUTOCAD Drafting/Design, Desktop publishing/layout. Original designs to specifications. Training. (213) 306-2272.

Clipper, dBase III+, IV custom programming, Lotus, Q&A, PC-File application design. Free initial consultation. Reas rates. Call Emil (213) 850-7751.

SOFTWARE FOR SALE

AMERICAL GROUP
COMPUTER PRODUCTS, INC.

Diskettes-Lifetime Warranty

3 1/2" DSDD (min 50)	39¢
3 1/2" DSDD Sony	59¢
5 1/4" DSDD (min 100)	25¢
5 1/4" DSDD (1.2MB) min 100	39¢
5 1/4" DSDD Color (16 colors)	39¢
5 1/4" DSDD Color (Red, Blue)	59¢
Modem Zoom External (or any computer)	$109
Mac Scanner by Logitech	$349
Mac 101 Keyboard	$149
Mac Trac Ball	$79
Trac Ball for PC	$59
Option Board	$119
MC Carrying Case SE	$72

SONY • 3M • BASF • JVC • *Dysan*
Bulk • Generic • Color • White-Boxed
Data Cartridges • FAX Paper • Ribbons
Computer Paper • Cables • Modems
Mouse Products & Comp. Accessories

DISTRIBUTION CENTER
12132 Sherman Way
North Hollywood, CA 91605
1-818-765-3040

PUBLIC SHOWROOM
14200 Ventura Blvd
Sherman Oaks, CA 91423
1-818-906-1168

SOFTWARE FOR SALE

Adult Eyes Only!

Introducing shareware/freeware's best adult software. You get 10 disks jammed with the best and most unbelievable adult software available. Send $24.95 for 5 1/4" disks or $32.95 for 3 1/2" disks to: Total Public Domain, 11684 Ventura Blvd. Suite 428, Studio City, CA 91604

Super VGA, VGA, EGA & CGA high resolution pictures & quality demos for IBM PC/XT/AT & compatibles for as low as 35¢ each. Send for free catalog to: PC Pictures, Box 2922, Corona, CA 91718.

Apple II Computer Programs for Pennies! Public Domain, Shareware, Eamon Adventures, AppleWorks Templates & more. Send SASE for free info: P.D.L. West, PO Box 805, Freedom, CA 95019.

Vehicle Maintenance, tracks scheduled maintenance, fuel costs, license expirations. $30.00 or $5.00 demo disk. TBS, 16835 Algonquin #180, Huntington Beach, CA 92649.

IBM, C64, C/PM public domain, shareware. Cheap! Send large SASE for catalog: P.D.U.G., P.O. Box 57225, L.A., CA 90057.

Free software. For info send SASE: Ramiro Noriega, 130 E. Woodbury Rd., Pasadena, CA 91104.

WANTED

Wanted: computer owner or service to place ads on computer bulletin boards. Lv msg (213) 281-8286.

Software Duplication
(714) 250-1133

- Competitive Prices - Yes
- 5 1/4" & 3 1/2" Format - Yes
- Fast Turn Around - Yes
- Packaging - Yes
- Verifiabily - Yes
- Quality - Yes
- Service - Yes
- Name Brand Media - Yes

Future Solutions, Inc.
17921–G, Skypark Circle • Irvine, CA 92714
(714) 250-1133

HARD DISK DRIVE REPAIR
RELIABLE, QUALITY REPAIRS OF
ALL IBM-XT/AT DRIVES
• Seagate • Miniscribe • Rodime • Tandon • CMI • & More
• 2 to 5 Day Turnaround
• Full 6 Month Warranty
WE SELL
Reconditioned Drives & New Controllers
CATALINA TECHNOLOGY
3422 L West MacArthur Blvd.
Santa Ana, CA 92704
(714) 434-9144

TAPE DRIVE REPAIR
- Fast Turn-Around!
- Expedite Service Available!
- Full 6-Month Warranty!
- Maintenance Contracts!
- Dealers Are Welcome!
- We Sell Refurbished Drives!

• ARCHIVE • CALIPER • CIPHER • CMS • EMERALD • EVEREX • GENOA • IRWIN • KENEDY • MAYNARD • MOUNTAIN • TANBERG • TEAC • SYSGEN • WANGTEK •

DataTek
14392 Hoover St., Suite B 18
Westminster, CA 92683
(714) 898-2249
FAX: (714) 898-2637

Don't Delay, Do it Today!!!
DUPLICATION
IBM PS/2 • MACINTOSH • APPLE
COMMODORE • ATARI
24 Hour Turnaround.
Fastest in the West,
No Minimums!!! Custom
Printed Tyvek Sleeves & Labels
I.D. DISK CO. 415-883-4628
NATIONWIDE 1-800-527-DISK

COMPUTER SERVICES
If you own a Computer System and need help, Call Us!!
Free Telephone & Technical Support
(714) 724-1230
WILKINSON MICRO
Parts & Service Available

35mm **Slides** 4x5
PC Graphics
PCX TARGA SCx GIF
and
Applause II Corel Draw
Quattro Pro
Sharp TEXT Clear
SCREENS
Capture Utility Available
McLain Imaging
voice: (714) 642-5219
bbs: (714) 642-1030

LASER ONE
Remanufactured Cartridges as low as $40.00
New Canon/HP Cartridges as low as $85.00
On-Site Laser Printer Cleaning/Calibration as low as $27.50
Avoid bad prints & costly repairs, get your laser printer cleaned TODAY!
SAVE UP TO 75%
Customer Satisfaction Guaranteed
(818) 547-0636
We also buy empty cartridges

DATA RECOVERY
- We build XT & AT Systems
- See our other ad for hard drive repair & sales.

SIM-TRADE CO.
8040 Remmet Ave. #1 Canoga Park, CA 91304
(818) 703-5155 Fax (818) 703-5964

CALL (213) 467-7878 TO PLACE YOUR CLASSIFIED AD TODAY!

Computer & Software Guild

HYUNDAI

Model 286e w/640K RAM
80286 - 12 Mhz
40 MbB, 28ms Harddisk
Color VGA Monitor
101 key tactile Keyboard

$1,549

$47 per Month

CROWN 386/20

80386 - 20 MHz
1 MB RAM
40 MB, 28ms Harddisk
Color VGA Monitorr
101 key Keyboard
Choice of Minitower or Desktop

$2,295

$69 per Month

ALR

Flexcache 25386DT-40
80386 with 64 K Cache
25 MHz, 1 Meg RAM
40 MB 28 ms Harddisk
Color VGA Monitor
101 Key Tactile Keyboard

$3,095

$81 per Month

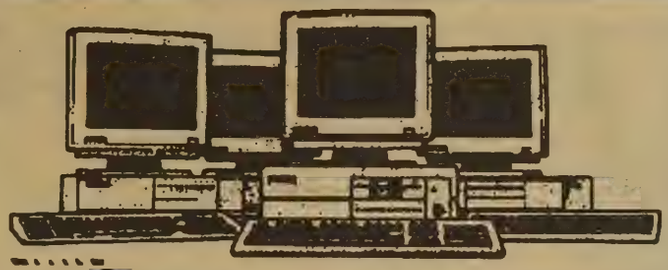
LEADING EDGE

Model D2 w/640K RAM
80286 - 12 Mhz
40 Mb 28 ms Harddisk
Color VGA Monitor
101 key tactile Keyboard

$1,595

$48 per Month

SPECIAL BUY



COLOR COMPUTER

Color Computer System
20 Mb Hard Disk
Color Monitor
640 KB RAM, 10 MHz
Enhanced 101 Keyboard

$995

$37 per Month

386/33 MHz VGA SYSTEM

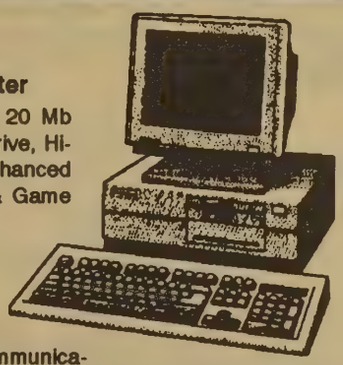
Crown 80386-33 Megahertz Computer
1 Megabyte Ramdom Access Memory
40 Megabyte, 28 ms Harddisk
32 Killobyte Cache, Enhanced Keyboard
16 bit, 256 Killobyte Video Board
Samsung 0.31 mm dot Color VGA Monitor

$2,995

$ 87 per Month

COMPLETE SYSTEM

AT Compatible Computer
12 Megahertz, 1mb RAM, 20 Mb Hard Disk, 1.2 mb Floppy Drive, Hi-Rez Graphics Monitor, Enhanced Keyboard, Serial, Parallel & Game Ports 12 Month Warantee.



FREE with System ...
Word Processor, Database, Graphics, Spreadsheet, Communications, Assorted Games, Electronic Rolodex, Sign & Banner Maker, Diagnostics, PLUS ... Box of Disks, Ream or paper, Surge Suppressor, and ALL Cables !

Panasonic KX-P 1180 Printer ...
180 Characters per Second.
10 Graphic Character Mode.

$1,449

$45per Month

20-60% OFF

HUGE SELECTION
OVER 10,000 ITEMS

Hardware
Disk & Tape Drives, Joy Sticks & Mice, Serial, Parallel & Video Boards.

Accessories
Cables, Adapters, Diskettes, Paper, Ribbons, Templates, Printer Stands, Surge Protectors and A/B Switches, Computer & Keyboard Covers, Software Templates.

Books & Software
Accounting, Business Management, Construction, Desktop Publishing, Inventory Control, Medical/Dental. Networking, Programing, & Sales.

WEEKLY SPECIALS

COMPUTERS

AST Bravo 286/20mHD	$1179
AST Bravo 386SX/20mHD	$1879
AST Premium 386/40mHD	$3399
EVEREX AGI 286/20mHD	$1199
EVEREX STEP 286/20mHD	$1349
EVEREX AGI 386/40mHD	$2195
EVEREX STEP 386/40mHD	$3095
HYUNDAI 286E/20mHD	$1099
HYUNDAI 386SX/20mHD	$1499
HYUNDAI 386C/40mHD	$2049
ALR 386/25/40mHD	$2499

HEWLETT PACKARD

Laserjet III	$1,695
Laserjet IIP	$995
Deskjet Plus	$749
Lasetjet Toners	In Stock
Deskjet & Paintjet Cartriges	In Stock
Font Cartriges	$Call
Memory Expansion	$Call

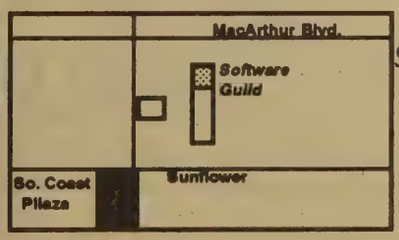
SOFTWARE

AUTOCAD Rel 10	$1995
CLARION Proffessional	$379
STATE of the ART	25% OFF

FREE ESTIMATES

Software & Hardware

Repairs • Upgrades

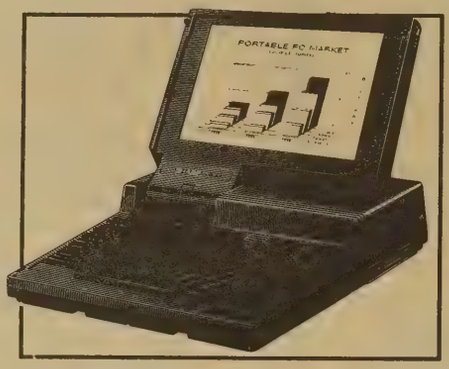


OPEN Monday Thru Saturday
90 days same as cash
3821 S. BRISTOL STREET
NEAR SO. COAST PLAZA
Santa Ana, CA 92704
641-0332

Master Charge
Visa
American Express

DSD

Specialists for all your office automation needs



SHARP

On Site or Depot Service Contracts

Support Agreements

Networks

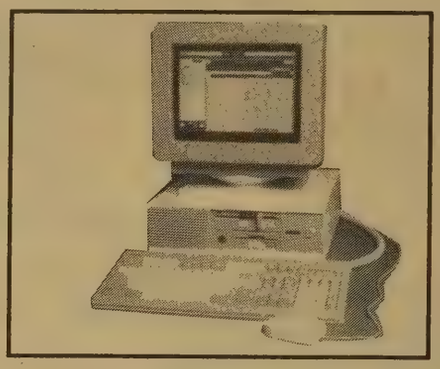
Computers

Telephone systems

Security systems

Custom wiring

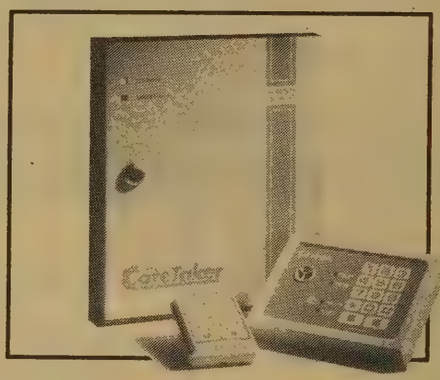
Training



NCR

INTER-TEL®

Free Estimates, Complete services for all budgets.



ITI

Discounts for dealers available

Our systems consultants have the product knowledge to help you make intelligent decisions when it comes to your office automation needs. We supply working state-of-the-art solutions at reasonable prices. We don't leave you with the sale, the majority of our business is from repeat customers. We provide Service and Support contracts with quick response, tailored to all budgets, at half the cost of time and materials billing.

Design Service Development, Inc.
13353 Alondra Blvd., Ste. 105
Santa Fe Springs, CA 90670
Phone (213) 926-5140 or (714) 521-9494
State License #LA001109

We have over 22 years experience installing closed circuit TV, telephone, network, and intercom systems. We have installed over 5000 miles of cable.

IBM COMPATIBLE PRODUCTS

MOTHERBOARDS

XT8088-10 MHz $72
AT80286-12 AMI-VLSI 165
80386-16SX 355
80386-20 C & T Chip Set 595
80386-25 C & T Chip Set 695
80386-25 w/64K Cache 950
80386-33 w/Cache 1750

HARD & FLOPPY DRIVES

Teac 55 BR ½ Ht 360K $69
Fujitsu ½ Ht 360K 62
Fujitsu 1.2 Meg 82
Teac 3½" 720K 79
Teac 3½" 1.44 Meg 89
Fujitsu 40 MB IDE Drive w/H&F Host Adapter .. 375
Seagate 3½" 80 MB 15 ms 650
20 Meg w/Controller $249
30 Meg w/Controller 269
Seagate 40 Meg 28ms 339
Seagate 80 Meg 28ms 559
Floppy Controller 29
XT 1.2 Meg Floppy Controller 54

ADD-ON CARDS

150 Watt P.S. 59
AT Keyboard w/Trackball 99
Clock Card 29
Serial Card 34
Multi I/O 49
MGP DFI w/Color Emulator .. 49
CGA Card w/Printer Adapter . 55
EGA Autoswitch 99
No Slot Clock 39
Hard Drive Controller $59
RLL Controller For HD 65
Max Flight Yoke 75
AST 6 Pack Plus w/384K 195
Genoa 6300 VGA w/512K 195

MONITORS

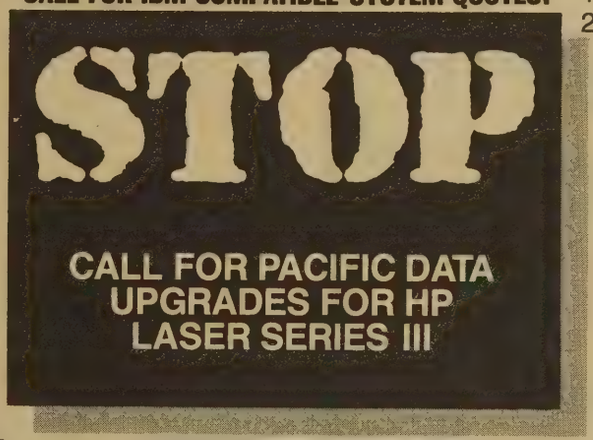
Amber Monochrome $85
EGA 640x350 349
VGA Samsung 640x480 325
CTX VGA Multiscan 800x600 449
Sony VGA CPD 1390 650
Relisys VGA Multiscan 800x600 .. 489

MODEMS

Star 2400 for MAC w/software & cable $119
2400 Baud Internal 129
2400 Baud External 139
1200 Baud Internal 65
1200 Baud External 79
PC Alibi Modem w/Fax 4800 Software 189
Dyna Link Pocket Modem 2400 .. 159
Everex Evercom 2400 139

MS DOS
3.2
$65
3.3
$75
4.01
$69

CALL FOR IBM COMPATIBLE SYSTEM QUOTES!



MATH COPROCESSORS

PC XT 5/8/10 MHz $99/129/189
AT 5/6/8/10/12 MHz 80/139/179/205/259
For 386 16/20/25 MHz .. 339/399/449

CALL FOR BEST PRICES ON

64K, 256K 1 MEG DRAM
SIMMS, SIPPS
DEALER INQUIRIES WELCOME

MOUSE & TRACK BALLS

C9 Logitech Bus, Serial $99
IMSI Opti Mouse 79
IMSI Mouse w/Pipe Dream Software 59.95
IMSI Mouse w/1st Publishing 99
Mac Trap 79.95
Color Mouse 45
Genius Mouse 6000 w/Dr. Halo ... 55

PRINTERS

HEWLETT PACKARD

Laser Jet Series IID $2975
Laser Jet Series II 1689
Laser Jet Series IIP 1095
Laser Jet Series III 1675
Desk Jet + ... 749
Desk Jet 625

PACIFIC DATA

25 Fonts In One $269
Plotter In A Cartridge II/IIP 229/249
Pacific Page (Post Script) for II/II P 449/359
Headlines Font 229

RAM UPGRADES

1 Meg Upgrade For Laser Jet II $219
2 Meg Upgrade For Laser Jet II 314
4 Meg Upgrade For Laser Jet II .. 500
1 Meg Upgrade For Laser Jet IIP . 239
2 Meg Upgrade For Laser Jet IIP . 339

EPSON

LX810 ..... $195
FX1050 439
LQ510 335
LQ850 330 519
LQ950 569
LQ1050 719
LQ2550 919

PANASONIC

KX1180 ..... $199
KX1124 309
KX1624 449

CANON

LBP-8 Mach III Laser Printer $1700

APPLE COMPATIBLE PRODUCTS

800K Mac Drive $175
½ Ht Apple Compt Drive 89
IIc ½ Ht Compatible 95
II + 80 Column 54
Disk Controller 42
IIe 80 Column w/64K 44
Parallel Interface 40
Graphics Parallel 52
16K RAM Card 34.95
Super Serial Card 65
IIe 1 Meg RAM Board w/256K ... 119
Epic 2400 Baud Int. Modem 99
Super Save Fan II, II +, IIe 25
Numeric Key Pad IIe 29
No Slot Clock 39
Max Flight Yoke IIe,c,gs 75
RF Modulators II, +, e 12
CPM Card 39

90 Day Replacement Warranty Through Guenther Most Items 1 Year Repair

SINCE 1982

FOR SALES ONLY
OUTSIDE CALIFORNIA
Toll-Free 1-800-458-9404

$4.50 Minimum Shipping

GUENTHER
COMPUTER PRODUCTS INC.

Prices Subject To Change w/o Notice

SALES: (408) 458-9404
FAX: 458-3428
PURCHASING: (408) 458-0671
312 Locust St.
Santa Cruz, CA 95060

ADVERTISERS INDEX

A.J. Computer Supplies 104
ACP Superstore 118
AI Tech 24
America Computer Technologies 11
American Digital Discount Assoc. 111
AMS, Advanced Multi-User Systems, Inc. 108
Artificial Intelligence Technolgy 65
ATS 118
Bence Audio 51
Best Bits & Bytes 34
Betamag 64
Binary Computer Corporation 15
Brother Int'l. 2
Burnham Computer Center 84
Century Computer Systems 68
CGS, Cambridge Systems 112
Citizen America 17
Compulan 86
CompuPlus, Inc. 78
Compute Data 106
Computer & Software Guild 125
Computer Business Center 97
Computer City Supercenter 37
Computer Disk Services 68
Computer Factory 39
Computer Marketplace 106
Computer Pacer 31
Computer Palace 43
Computer Supplies Unlimited 23
Computer Supply Club 93
Computer Swap 64
Computer System Integerators 60
Computer Wiz 10
Computerlane 115
Concord Computer Products 113
Creative Computers 59
CS Technology 92
Data Depot 110
Data Dynamics 77
Dav Tech Computer Center 7,9
Demo Source 92
Digitech 69,71
Don Hamilton 126
Eagle Electronics 88
EAP, Electro Computer Advanced Products 95
Eastern Ent. 123
Electronic Business Computers 20
Electronic Music Box 94
Espanore, LTD. 131
Fremont Communications 26
Future Computers 112
Gamma Computer 80
Gatetronix 63
Goodman Music 72,73
Guenther Computers 127
Hacker Electronics 18
HG Computers 41
I.C. Computers, Inc. 45
ICC 66,67
ICS, Integrated Computer Systems 21
Jade Computer 81
K.I.S. Computer Center 129
Katronic Company 114
KECS 28
LA Computer Center 61
Law Cypress Distributing 84,128
Lazer Life 104
Legatech 103
Linnex Computers, Inc. 41
Logicache Computers, Inc. 78
Mac Surgeon 51
Magna Data 101
May Computer Products 29
Medionix, Inc. 35
Mega PC Technology 85
MICA 33
Micro-City 117
Microflex 109
Next Computer 99
Optocad 18
Pacifico Computer Center 27
Page Computers 75
PC House 82
PC Systems Design 105,107
PC Warehouse 25
PCT 42
PG Computers 119
Pillarco 3
PMC Computer Systems 79
PRC Technology 83
QDG 121
Quarterdeck 132
Rantek Computer Center 89
Select Computer Technology 30
Sim Trade Co. 8
Simtec Computer Rentals 128
Software Computer Xtra 4, 5
SOS Computers 49
Star System Technology 90
Subscription Coupon 100
Syntax Computer, Inc. 12,13
Tanstaafl Mfg. 98
The Essence Group 47
The Software Labs 57
Transnational Electronics, Inc. 88
Unicom 53
Unitec 91
Unix Expo 87
UQM 19
Veritek 20
Victory Systems 51

WE MAKE RENTING COMPUTERS SIMPLE...

FOR ALL YOUR CORPORATE NEEDS:
Conventions - Trade Shows - Seminars-
Network Configuration Delays
Peak Loads - Down Times

- DAILY - WEEKLY - MONTHLY RENTALS
- IBM, APPLE, COMPAQ, HEWLETT PACKARD AND MORE - LATEST EQUIPMENT - HUGE INVENTORY
- LOCAL INSTALLATION AND SET-UP
- ON-TIME DELIVERY - 24-HOUR ON CALL SERVICE
- SIMTEC IS THE ONLY COMPUTER RENTER BACKED BY ONE OF THE NATION'S LARGEST MICROCOMPUTER RESELLERS

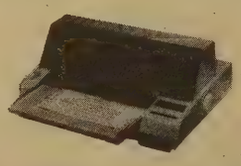
1-800-688-6288
5122 Bolsa Avenue, Suite 108
Huntington Beach, CA 92649
714-897-7922
Simtec is wholly owned by Inacomp Computer Centers, Inc.

SIMTEC COMPUTER RENTALS

Print With A Pro!!!
C.ITOH Prowriter Printers

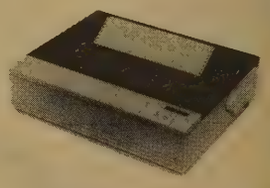
NEW!

The C-610
- 24 wire print head
- 240 cps @ 12 CPI
- Front and rear paper entry
- Original + 4 copy ability
- One inch tear bar



The CI-5000
- 18 wire print head
- 540 cps @ 12 CPI
- Top, bottom and rear paper feed
- Original + 5 copy ability

- DEC LA/50/75/210; IBM Proprinter XL; Epson FX - 286 e emulation capabilities



FOR MORE INFORMATION CALL YOUR LAW • CYPRESS REPRESENTATIVE

LAW • CYPRESS DISTRIBUTING COMPANY
San Jose, CA (408) 297-9800
Seattle, WA (206) 241-6628
Outside CA (800) 344-3044
Mission Viejo, CA (714) 770-7244
Lake Oswego, OR (503) 636-4409

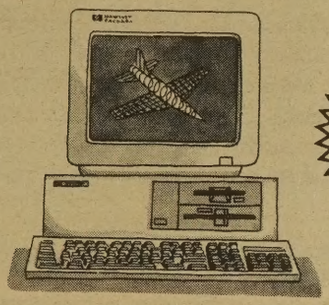
Amstrad • Canon • C. Itoh • Datasouth • FALCO • Fujitsu • Genicom • Ikegami • Link Magnavox • Moniterm • Panasonic • Seiko • Televideo

KIS COMPUTER CENTER

KEEP IT SIMPLE

"IF YOU HAVEN'T CALLED KIS, YOU HAVEN'T DONE YOUR SHOPPING YET!"

QUICK ON THE DRAW



BEST PRICE CALL NOW!

and spreadsheets, and desktop publishing, and...

Meet the PCs that love a challenge—Hewlett-Packard's powerful desktops, the HP Vectra QS PCs.

Unlike many other desktops, their 386-based processors will give you the power to run the software of the future while easily handling all of your business needs today. And like all HP products, the reputation for quality and reliability stands firm.

Come in or call for a free demonstration today and see how the HP Vectra QS PCs meet your toughest challenge.

- 7 accessory slots for outstanding expansion capability
- 16-MHz 386SX™ or 20-MHz 386™ microprocessor
- Full IBM PC/AT compatibility, runs MS-DOS,® OS/2 and XENIX

Hewlett Packard wants to say "Thank You"

If you buy any three QS computers, you will get a DeskJet Plus Printer FREE.

If you buy five QS computers, you will get a IIP Printer FREE.

If you buy seven QS computers, you will get a JET III Printer FREE.

So, now is the time to buy.

Best Price Call Now

HEWLETT PACKARD

DESKJET PRINTER

3 YEAR WARRANTY

$525

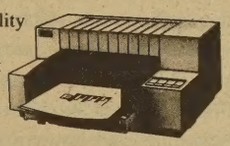
$75 MANUFACTURER REBATE

SPECIAL SALE! HURRY, IN STOCK NOW!

DESKJET PLUS PRINTER

Laser quality output just got faster

- Laser-quality output
- Fast, quiet operation
- Expanded font capability
- Built-in landscape mode

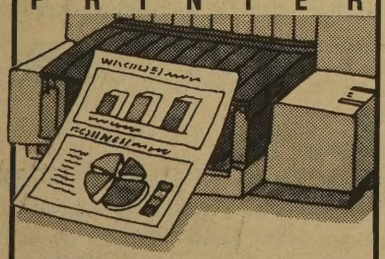


$150 MANUFACTURER REBATE

3 YEAR WARRANTY

$629

DESKWRITER PRINTER



2279A Apple Talk.....$775
2278A (Qty Limited).....$745

- Laser-quality, 300 dpi resolution
- Variety of fonts in unlimited sizes
- Personal desktop convenience

LASERJET IID PRINTER

IN STOCK

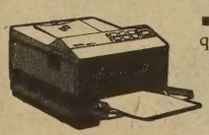
The Hewlett-Packard LaserJet IID Printer With Two-Tray Flexibility And Two-Sided Printing

LASERJET III PRINTER

A revolution in resolution
Up to 8 pages per minute
300 dpi resolution enhancement technology

- 1 megabyte standard
- 14 bitmapped fonts
- 8 scalable typefaces
- Serial and parallel
- AppleTalk
- Epson FX/IMB proprinter and Adobe Postscript

LASERJET SERIES IIP PRINTER



- Most affordable HP LaserJet printer
- Publication-quality output
- Same wide range of HP LaserJet software and font support
- Backed by HP's reputation for reliability and support

$950

NOTE: QUALIFIED SCHOOL FACULTY'S STAFF WILL OBTAIN ADDITIONAL DISCOUNT

HEWLETT PACKARD

11805 E. Telegraph Road
Santa Fe Springs (213) 942-0338

18645 E. Gale Avenue, Suite 180
City of Industry • (818) 913-7473

The Infamous Open Letter

The Only Way To Make A Point In The 21st Century

BY JOHN C. DVORAK

DVORAK'S LAST COLUMN

I think everyone has wanted to sound off to the bigwigs of the computer business about one thing or another. Most of us know that a gripe sent to the boss man of a big company seldom reaches its destination. An officious secretary or administrative assistant is hired to keep memos and hate mail away from the boss to prevent the possibility of constipation and irritability.

I've found that the best way to communicate about anything is to do an open letter in a public forum. It's a trend of the future as CEOs isolate themselves from the public. The distribution of a few hundred thousand copies means it's possible that a copy will sneak through to the boss. Here's a few letters we need passed around:

An Open Letter To Bill Gates,
Chairman Of Microsoft

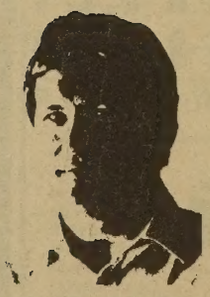
Bill, I have a big complaint. First of all, despite your theoretical wealth, you have refused to spend your personal riches on anything except that house you keep saying that you'll build someday. Where's the boat? Where's the neat-o apartment in Naples? Where's the helicopter with the Microsoft logo on the side? Why haven't you bought a sports franchise? I'm not the only one who wonders about this.

This can't continue. Rumor has it that you fly coach when you travel. What's the point? Do you want to go down in history as a tightwad? A few minutes of interest income can buy the damn jet, and you're flying coach to (I'm told) "set an example" for the rest of the employees! Hey, they should be in business class at the very least! Everyone in this industry flies business class. You meet other people in the industry in business class. Deals are made. Cards are exchanged. In coach you meet people that were bumped from the Greyhound bus or midgets who find the lack of leg room acceptable.

Then again, why should I care how you spend your money or where you sit on a plane? Maybe you actually like sitting in coach. Ok, fine. Forget I said anything.

An Open Letter To John Akers Of IBM

John, what the heck are you guys doing? Hagar the Horrible? Sheesh!



John C. Dvorak graduated from the University of California. He is a contributing editor of PC Magazine *and* MacUser, *and is considered by many to epitomize the contrarian view of things—a charge that he vehemently denies. Dvorak's motto is: If you have nothing nice to say, then don't say anything at all.*

An Open Letter To Steve Jobs Of NeXT

Steve, I know, I know—I never write anymore. I've been so busy and I see you're starting to ship product. So you must be busy watching them robots work, huh? Boy, people really like that machine, as slow as they say it is. Good luck with it!

So it looks like the long-term battle of egos between you and old Bill Gates is a runaway. Gates is starting to look like that UNLV basketball team we saw a few weeks back. He just keeps on making money. What is it? Is he up over $2 billion? Wow! Do you realize that if you made $5 million a year cash in the bank and saved every penny that you'd have to work for 400 years to catch up to him?

It's a lost cause. Gates has won the battle. Maybe you should make friends with him again. He'll be in a good mood over this new Windows 3.0 announcement. Time to give him a call to say hi.

Have you seen Will Hearst lately? You know him, he's the guy who runs the *Examiner* over in San Francisco. Last time you chatted with him you told him to fire me. Remember that? The publisher of this magazine is Dennis Erokan. He hasn't heard from you about firing me from this back page. Give him a call. I'm so glad you keep reading this stuff that you feel obliged to advise my employers about my career path. What a guy!

Last question: Are you going to ever make that computer of yours in beige? I think that's what you need to do to make it sell better.

An Open Letter To Scott McNealy,
Sun Microsystems

Scott, hey, we haven't talked for a while. So I hear that you were roaming around some hotel hallway with Rod Canion of Compaq the other day. Was it some secret meeting? Is there some merger thing happening here? Or what?

Don't you think it was a laugh riot that it was John Markoff of the *New York Times* who ran into you two? He probably told everyone he knew about it. He told me. I couldn't stop laughing when I heard the story. You can run, but you can't hide.

So I figure by putting this information into the public domain I clear myself of trading on insider information if I should speculate on a massive merger. Then again, I'm not sure which company would go up. Maybe they'd both go down! Maybe I'll stick to mutual funds and just watch. My advice is that you guys find better places to meet—like in Houston.

Anyway, I was thinking about what an interesting situation we'd have if Sun and Compaq merged. I mean it's possible that your meeting was coincidental. You may have both been at a memo-writing seminar or something. I'd call to ask, but what are you going to tell me? No secrets, that's for sure.

Whatever the case, maybe you should merge with Compaq. You might have a real killer company. Compaq knows how to sell through dealers, unlike your company. You know the mini market, unlike Compaq. There are a lot of synergistic aspects to such a deal. The problem is that you and Rod can't *both* run the company and I'm sure neither of you wants to relinquish control. I mean you're both having so much fun and rolling in dough and all. So I figure it will never happen.

I'm just wondering if this open letter will run up the stock price or not. You know, this is how rumors get started. Your meeting with him was probably to discuss some mundane aspect of BMW repair. Anyway, keep up the good work. This is all the free publicity you'll get from me this year.

Open Letter To Lee Ioccoca,
Chairman, Chrysler Corporation

Lee, it's good to see your face on TV so often. But I miss that old ad you did where you walked down the assembly line, then stopped to talk. You rested your hand on a spot welder anode, did you know that? It didn't seem like a smart thing to do, if you ask me.

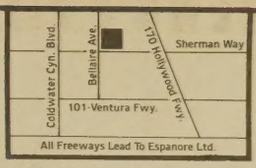
Anyway, I've included you in these open letters because many observers think that the computer business is slowly going the way of the car business. Someday there will be very few makers, little innovation and plenty of complaining. You know, like you and your firm. I'm not looking forward to it since we already have too many people bellyaching about one thing or another. Please do us all a favor—stop setting this bad example, get off TV and go do some real work. Look at Bill Gates, you don't see him complaining! Thanks. ■

ESPANORE LTD. • COMPUTER SUPPLIES

7270 Bellaire Ave., North Hollywood, CA 91605
Hours: Monday - Friday • 8:30am - 5:30pm
Fax: 818/765-1640 • 818/765-0526

800/225-8230

Visit Our Retail Location



BRAND NAME DISKETTES FOR LESS • NO MINIMUMS

maxell

5.25" DS	6.39
5.25" HD	10.95
3.5" DS	10.95
3.5" HD	19.95

Verbatim®

5.25" DS	5.50
5.25" HD	9.95
3.5" DS	8.95
3.5" HD	16.95

Dysan

5.25" DS	6.50
5.25" HD	11.50
3.5" DS	9.95
3.5" HD	19.95

SONY

3.5" DS Bulk	59
3.5" DS	8.95
3.5" HD	16.95

Nashua

5.25" DS	4.00
5.25" HD	7.50
3.5" DS	7.95
3.5" HD	16.50

3M

5.25" DS	6.59
5.25" HD	10.95
3.5" DS	10.95
3.5" HD	17.95

BASF

5.25" DS	4.95
5.25" HD	8.45
3.5" DS	8.95
3.5" HD	15.95

XIDEX

5.25" DS	3.95
5.25" HD	7.50
3.5" DS	9.50
3.5" HD	17.95

BULK DISKETTES • NO MINIMUMS

5.25" DS-Naked
25¢
Deluxe*.....28¢
White Box*.....29¢
*Includes Tyvek Sleeves & Tabs

5.25" DS-Color
35¢
*Includes Tyvek Sleeves & Tabs
Colors: Lt. Blue, Royal Blue, Dark Blue, Brown, Green, Grey, Red, Lavender, Magenta, Burgundy, Orange, Yellow, White & Rainbow Pak (10 colors)

3.5" DS-Bulk
39¢
SONY 3.5" DS-Bulk
59¢
Nine Colors Available

All Diskettes are 102% Tested error free and have a lifetime guarantee

5.25" HD-Naked Bulk
43¢
41¢/500+, 39¢/1000+

5.25" HD-Color
63¢
*Includes Tyvek Sleeves & Tabs
Colors: Royal Blue, Green, Grey, Red, Yellow

3.5" HD-Bulk
89¢
85¢/500+

AVERY

10% off Catalog Price on ALL Labels

Size	Qty.	Notes	P/N	Price
3½"x15/16"	1000		4145	*6.25
3½"x15/16"	1000	Clear	4162	13.40
3½"x15/16"	3000	3 Across	4144	12.30
3½"x15/16"	5000		7013	14.50
3½"x15/16"	5000	Clear	4178	90.80
4"x15/16"	2000	2 Across	4143	11.40
4"x17/16"	1000		4146	8.50
4"x17/16"	5000		7014	22.40
2¾"x2¾"	250	3.5" Disks	4241	12.95
4¾"x1¼"	250	5.25" Disks	4240	10.50
3½"x15/16"	3750	Bulk Pack	4600	15.95
3½"x7/16"	5000	Assorted	4266	7.10
3"x5"	500	Index Card	4166	10.25
1"x25/8"	3000	Laser	5160	22.50
1"x4"	2000	Laser	5161	22.50
3½" Disk Labels	630	Laser Labels	5196	31.95
5¼" Disk Labels	840	Laser Labels	5197	31.95
3½"x27/16"	250	Name badge	4160	10.00
3½"x6"	500	Post Card	4167	12.35
21/6"x4"	500	Rotary Idx	4168	9.75
List & Mail Plus (IBM-XT/AT Software)			4210	49.20

This is a small sampling of our Avery pricing. We carry the full Avery line, call for pricing.

Extras

Tyvek Sleeves	4¢ ea.
Paper Sleeves	2¢ ea.
5.25" Labels (Colored)	2¢ ea.
3.5" Labels (Colored)	3¢ ea.

Data Cartridges

3M — DC300XLP	19.95
3M — DC600A	22.50
3M — DC6150 (600xlp)	26.50
Sony QD2000	14.95
3M — DC2000	16.50
3M - DC2120 (Ex)	22.95
Verb ST-600	9.95
Maxell CS 600	17.95

Storage Cases

DS-100L (5.25" • 100)	*7.95
DS-120L (5.25" • 120)	9.95
DD-80L (3.5" • 80)	8.95
DD-120L (3.5" • 120)	9.95

WIZARDWARE (Pak) *29.95

19 Paks Available: Bible • Beginner • Business • College Prep • EGA Sampler • Desktop Publishing • Games • Graphics Library • Kids Ed. • Mouse • T-Shirt • Teacher • Ventura/Pagemaker • VGA Sampler • Quality Shareware/PD • Others Available • Satisfaction 100% Guaranteed

Ribbons for over 10,000 Printers

All types • All Sizes • Colors • Quantity Discounts

Epson FX 80/Citizen MSP10	3.15	Oki 80	1.45	Toshiba 321 SL	6.75
Epson FX 100/Citizen MSP15	4.50	Oki 182	4.50	NEC P2200	7.60
Epson LQ 800	4.95	Oki 393	24.30	NEC 2000 Flip	7.15
Epson LQ 1000	5.40	Panasonic 1124	7.65	Tally Spirit 80	5.15
Citizen 120/180D	4.70	Diablo Hytype II	3.25	Star NX10	4.75
Panasonic 1090	4.95	Epson LX80	3.15	Star NX1000	5.85
Panasonic 1524	8.10	Epson EX800	5.65	IBM Proprinter	4.25
Apple Imagewriter/C ITOH	3.15	Toshiba 351	5.15	IBM Proprinter XL	5.65

ESPANORE, LTD. sells compatible ribbons that are manufactured to meet or exceed OEM specs.

CALL FOR FREE NEW CATALOG

- Paper
- Custom Forms & Checks
- Computer Backup Tapes
- Toner Cartridges
- Dust Covers
- Accessories and More!

Accessories

Mouse Mat (5 Colors)	*4.95
Monitor Stand	11.95
Power Strip	9.95
Printer Stand	13.50

ESPANORE LTD. • COMPUTER SUPPLIES
7270 Bellaire Ave., North Hollywood, CA 91605
Shipping: UPS Cost + $1, COD: $3.30, All orders shipped within 24 Hours
Expires: 5/31/90

800/225-8230
818/765-0526
Fax: 818/765-1640

Use the Brains IBM Gave You!

When the PC was new, big programs rarely used even 64K. So IBM® seemed quite generous when it gave us 640K of user memory.

That was eight years ago. Today, users are struggling to accommodate network and mouse drivers, TSRs and buffers within that same 640K along with the new generation of more powerful programs. It's known as 'RAM cram.'

If this is a problem you're facing (or expect to face) we have good news for you.

Introducing Manifest™—the Quarterdeck memory analyzer

Even expert PC users may be unaware how much of the capacity in most PCs is wasted.

That's why Quarterdeck Office Systems, publishers of DESQview,™ developed Manifest, a new, inexpensive tool to assess memory use. It's the result of years of in-depth study of the PC.'s memory map. It does for memory what PC Tools does for disks. All for under $60.

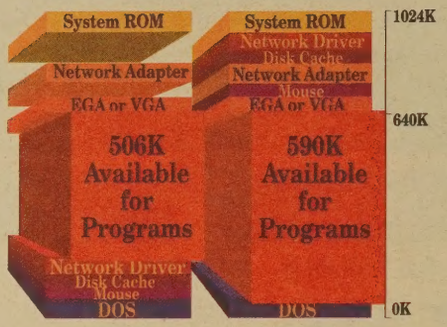
Manifest shows you things you might not otherwise know about your PC.

Manifest gives you a guided tour 'under the hood' of your PC, to show what's going on, what type and amount of memory is available, and even which portions of RAM are faster.

Then it suggests how you might load networks, buffers, TSRs, mouse drivers, and other utilities into unused memory.

It finds and displays all the contents of your AUTOEXEC.BAT and CONFIG.SYS files, which can be a big help in diagnosing problems.

Manifest even tests memory board speed so you can make informed buying decisions.



Before **After**

Your memory is full of holes. We can fill them. And give your programs more room to run smoothly.

Best of all, you don't need a PhD to understand what you're doing. Manifest's interactive operation tells you how to use the program and what benefits you can expect.

Introducing QRAM™—the Quarterdeck memory optimizer

If you have an EMS 4.0 or EEMS board, QRAM (pronounced cram) can use it to free up more memory within the 0K to 640K area. Gain the additional 30-130K you need for those big programs and files. It looks at your AUTOEXEC.BAT and CONFIG.SYS files and figures out which TSRs, network and mouse drivers and DOS resources can be moved out of program memory.

And if you have an EGA or VGA-equipped PC and don't need graphics at the moment, QRAM will make an additional 96K of memory available! When you need graphics again, QRAM will switch you back to graphics mode! Think how helpful that will be for those big dBASE files.

QRAM can't work miracles, but if there's memory available anywhere, QRAM lets you use it to boost your PCs performance.

QRAM is available bundled with Manifest for just a few dollars more than Manifest alone.

Manifest and QRAM—two more examples of Quarterdeck's commitment to giving you the most productivity out of the PC and software you own today.

Introducing two new Quarterdeck Expanded Memory Managers™ QEMM 50/60 and QEMM-386

QEMM is the all-in-one memory manager for breaking the 640K barrier.

QEMM 50/60 is for the PS/2™ series 50 and 60. It works with all IBM-compatible memory boards, and comes with a long list of adapter data to help you use your MCA hardware better.

QEMM-386 is for all 386-based computers, including older PCs with 80386 upgrade boards. It allows you to expand your RAM capacity—all the way to 32 megabytes, if you like.

Both give you expanded memory compatible with EMS 4.0 and EEMS. Both are also extended memory managers, compatible with XMS.

And both give you maximum control over your memory in the 640K-1024K area, guiding you through decisions on where to move TSRs and network drivers for maximum performance.

Manifest, QRAM, QEMM, and DESQview, our multitasking windowing environment—they're all designed to help you get the most from the software and PC you have today.

System Requirements

Manifest: 8088, 8086, 80286 80386 and i486 PCs & PS/2s

QRAM: 8088, 8086, 80286 PCs. Use of high memory is only available when PC has EMS 4 or EEMS expanded memory or Chips & Technologies shadow RAM.

QEMM 50/60: 80286-based PS/2s and compatibles with IBM PS/2 80286 Memory Expansion Option, IBM PS/2 80286 Expanded Memory Adapter/A or compatible.

QEMM-386: 80386-based PCs and PS/2s and PCs with 80386 add-in boards.

Trademarks: IBM, PS/2: IBM Corporation; PC Tools: Central Point Software; 80386, dBASE: Ashton Tate; 80386, i486: Intel Corporation, Chips and Technologies: Chips and Technologies Corporation

©1990 Quarterdeck Office Systems

Quarterdeck

Egghead Discount Software
San Pedro 213-833-0059
Santa Monica 213-829-3322
Los Angeles 213-387-1470
Pasadena 818-351-4273

Software Supermarket
Hawthorne 213-542-3801
Los Angeles 213-477-5122
Sherman Oaks 818-783-3233

Dustin Discount Software
Woodland Hills 818-710-9174

Super Computer Center
Torrance 213-542-8977
Santa Ana 714-754-1166
Fullerton 714-680-6550

Microage
Anaheim 714-530-3266

Soft Warehouse
Fountain Valley 714-965-0580
Torrance 213-540-0593

Simi Valley Software
Canoga Park 818-705-1895

And all Egghead Discount Software, Software City, ComputerLand and Businessland stores throughout Southern California